

ORIGINAL



0000114778

MUNGER CHADWICK, P.L.C.

JOHN F. MUNGER
MARK E. CHADWICK *
MICHAEL S. GREEN
KATHLEEN DELANEY WINGER
EVELYN PATRICK BOSS **
LAURA P. CHIASSON
JAMES D.V. STEVENSON

ATTORNEYS AT LAW
A PROFESSIONAL LIMITED LIABILITY COMPANY
NATIONAL BANK PLAZA
333 NORTH WILMOT, SUITE 300
TUCSON, ARIZONA 85711
(520) 721-1900
FAX (520) 747-1550
MungerChadwick.com

OF COUNSEL
LAWRENCE V. ROBERTSON, JR.
ADMITTED TO PRACTICE IN:
ARIZONA, COLORADO, MONTANA,
NEVADA, TEXAS, WYOMING,
DISTRICT OF COLUMBIA

OF COUNSEL
MILLER, LA SOTA AND PETERS, P.L.C.
PHOENIX, ARIZONA

OF COUNSEL
OGARRIO Y DIAZ ABOGADOS
MEXICO, D.F., MEXICO
(LICENSED SOLELY IN MEXICO)

MICHAEL M. RACY
GOVERNMENT RELATIONS DIRECTOR
(NON-LAWYER)
DIRECT LINE: (520) 906-4646

PHOENIX APPOINTMENT ADDRESS:
5225 N. CENTRAL
SUITE 235
PHOENIX, ARIZONA 85012-1452
(602) 230-1850

* Also Admitted in Colorado
** Also Admitted in Washington State

October 17, 2001

Nancy Cole, Supervisor
Docket Control
Arizona Corporation Commission
1200 W. Washington
Phoenix, Arizona 85007

RE: Bowie Power Station, L.L.C.
Docket No. L-00000X-01-0118
(Case No. 118) BB

RECEIVED
2001 OCT 17 P 4:17
AZ CORP COMMISSION
DOCUMENT CONTROL

Dear Ms. Cole:

Enclosed for filing and transmittal to the members of the Arizona Power Plant and Transmission Line Siting Committee are twenty-five (25) copies of Environmental Planning Group's technical report entitled *Cultural Resource Survey for the Proposed Bowie Power Station and Transmission Line, Graham and Cochise Counties, Arizona* (August 2001). In a letter dated September 14, 2001, Matthew Bilsbarrow of the Arizona State Historic Preservation Office concurred with the report's finding of no adverse effect for the proposed project.

We would also like to note that the above-referenced report contains information on the location of archaeological sites and, therefore, this information should be kept confidential pursuant to A.R.S. § 39-125. We suggest that distribution of these materials be based on a need-to-know-basis and that receivers of these materials be informed of their confidential nature.

Please contact me in the event you should have any questions. Thank you for your assistance.

Sincerely,

L.V. Robertson, Jr.
Lawrence V. Robertson, Jr.

LVR:cl

cc: Laurie A. Woodall, Chairman
All parties of record

Arizona Corporation Commission
DOCKETED

OCT 17 2001

DOCKETED BY	<i>mc</i>
-------------	-----------

**DRAFT
CULTURAL RESOURCE SURVEY
FOR THE PROPOSED BOWIE POWER STATION
AND TRANSMISSION LINE,
GRAHAM AND COCHISE COUNTIES, ARIZONA**

**PREPARED FOR
SOUTHWESTERN POWER GROUP II, LLC**

**SUBMITTED ON BEHALF OF THE
ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE
OF THE ARIZONA CORPORATION COMMISSION
AND
ARIZONA STATE LAND DEPARTMENT**

L-00000BB-01-0118

August 2001



**4350 E. Camelback, Suite G-200
Phoenix, AZ 85018**

**EPG Cultural Resource Services Technical Paper No. 6
Restrict distribution to prevent vandalism,
restrict information in this report about the location of archaeological sites**

ORIGINAL

DRAFT

**CULTURAL RESOURCE SURVEY FOR
THE PROPOSED BOWIE POWER STATION PROJECT,
GRAHAM AND COCHISE COUNTIES, ARIZONA**

prepared for

Bowie Power Station, LLC

Submitted on behalf of the

**Arizona Power Plant and Transmission Line Siting Committee
of the Arizona Corporation Commission**

Prepared by

Kris Dobschuetz

Environmental Planning Group
4350 E. Camelback, Suite G-200
Phoenix, AZ 85018

EPG Cultural Resource Services Technical Paper No. 6

Restrict distribution

To prevent vandalism, restrict information in this report about the location of archaeological sites.

August 2001

TABLE OF CONTENTS

Abstract	iii
Introduction	1
Project Description	1
Project Location	1
Scope of Survey	6
Environmental Setting.....	7
Physiographic Setting.....	7
Climate	9
Natural Vegetation and Wildlife	9
Cultural History.....	9
Paleoindian Period (11,500 BC to 7500 BC)	10
Archaic Period (7500 BC to AD 300).....	11
Ceramic Period (AD 300 to AD 1400).....	13
Early Ceramic Period (AD 300 to AD 750).....	14
Middle Ceramic Period (AD 750 to AD 1000).....	15
Late Ceramic Period (AD 1000 to AD 1400)	16
Ethnohistoric Period (AD 1400 to AD 1540).....	17
Historic Period (AD 1540 to AD 1950)	18
Records Review.....	20
Prior Cultural Resource Studies	20
General Land Office Maps	22
Survey Expectations	22
Field Survey Methods	22
Survey Results.....	24
Isolated Occurrences	28
Historic Structure	29
Gila Valley, Globe & Northern Railroad	30
Newly Recorded Sites	31
Site AZ CC:10:109 (ASM) – Railroad Siding	31
Conclusions and Recommendations.....	34
References Cited	36

LIST OF TABLES

1	Prior Cultural Resource Studies	21
2	Tabulation of Isolated Occurrences.....	29

LIST OF FIGURES

1	General Project Location.....	2
2a-c	Previous Research	3-5
3a-c	Survey Results.....	25-27
4	Drawing Indeterminate of Obsidian Projectile Point, IO-2.....	28
5	Site AZ CC:10:109 (ASM)	33

LIST OF PHOTOGRAPHS

1	Unsurveyable Segment within the Power Station Survey Area	7
2	Overview of the Location of the Proposed Power Station	8
3	Overview of the Location of the Proposed Transmission Line Route	8
4	Photograph of the Gila Valley Globe & Northern Railroad.....	30
5	Photograph of the Railroad Siding and Railroad Looking South.....	32
6	Photograph of the Railroad Siding Near Gold Gulch	32

ABSTRACT

Project Title: Bowie Power Station Project

Report Title: Cultural Resource Survey for the Proposed Bowie Power Station Project, Graham and Cochise Counties, Arizona

Report Date: July 2001

Agencies: Arizona Power Plant and Transmission Line Siting Committee of the Arizona Corporation Commission

Permit Number: Arizona State Museum Blanket Permit No. 2001-21b1

Project Number: Environmental Planning Group Numbers 1106 and 1130

Project Description: Bowie Power Station, LLC proposes to develop the Bowie Power Station Project, which includes the construction of a 1,000 megawatt (MW) combined-cycle, natural gas-fueled generation station, 345kV double-circuit transmission line, and a 345/230kV switchyard site. The power plant site will be located approximately 2 miles north of the town of Bowie. The proposed generation facility will include a switchyard, control and administrative buildings, water-cooled condensers, storage tanks, and other ancillary facilities. The proposed transmission line will extend from the power plant site approximately 14.3 miles in a northwesterly direction into Graham County, Arizona, to interconnect with Tucson Electric Power Company's (TEP) existing Greenlee-Vail and Springerville-Vail 345kV transmission line at a point located near U.S. Highway 191. In the final stage of development a 345kV/230kV switchyard, and a 230kV transmission interconnection with the existing Arizona Electric Power Cooperative (AEP) Red Tail-Dos Candados 230kV line, will be installed at that location.

Location and Jurisdiction: The proposed power station site is located on privately owned land in northern Cochise County within Section 28, Township 12 South, Range 28 East as depicted on the Bowie 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle.

The proposed transmission line route is located on privately owned land and land administered by the Arizona State Land Department (ASLD) within Cochise and Graham counties. The route is located within Sections

6, 7, 8, 17, 20, 28, and 29, Township 12 South, Range 28 East; Section 11, Township 11 South, Range 28 East; Section 26, 27, 28, 29, 30 and 36, Township 11 South, Range 27 East; and Section 14, 23, 24, 25, Township 11 South, Range 26 East as depicted on the Bowie, Luzena, Fisher Hills, and Monk Draw 7.5-minute USGS topographic quadrangle.

The proposed 345kV/230kV switchyard will be located on land administered by ASLD within Graham County, within Section 14, Township 11 South, Range 26 East as depicted on the Monk Draw 7.5-minute USGS topographic quadrangle.

Acreage:

Approximately 1,275 acres were intensively surveyed for cultural resources. The area examined includes 780 acres of privately owned land for the proposed plant site and adjacent parcels of land that were acquired as part of the Bowie Power Station Project. A total of 472 acres were surveyed for the transmission line route, including 346 acres of Arizona state land and 126 acres of private land. Approximately 23 acres of Arizona state land were surveyed for the proposed switchyard facility.

**Personnel and
Dates of
Fieldwork:**

Kris Dobschuetz directed the fieldwork, while Glenn Darrington served as principal investigator. Kris Dobschuetz was assisted by crew chiefs Mary Morrison and Scott Wilcox, and crew persons Mark Beckett, Mike Schroff, and Paul Geiger. The fieldwork was conducted on March 5-9, May 3-4, and May 7-10, 2001. A total of 36 person-days of effort were devoted to the fieldwork.

**Register-eligible
Properties:**

Arizona Eastern (historically known as the Gila Valley Globe & Northern Railroad (GVG&N))

**Register-ineligible
Properties:**

Twelve isolated occurrences were identified within the survey area. The isolated occurrences consist mainly of chipped stone, ceramics, and historic trash. One register-ineligible site, AZ CC:10:109 (ASM), was also identified within the project area. This site is an abandoned railroad siding associated with the GVG&N Railroad.

Recommendations: The intensive pedestrian survey of the proposed Bowie Power Station Project resulted in the identification of 12 isolated occurrences of cultural material, one historic structure, and one newly recorded historic feature. The one newly recorded site, AZ CC:10:109 (ASM), is recommended as ineligible for listing on the National Register of Historic Places. Although

the National Register status for the GVG&N Railroad has not been formally addressed, it will be treated as if it is eligible for the purposes of this report. The railroad will not be affected by the proposed project because it will be spanned and not directly impacted by construction.

Because no significant archaeological or historic properties appear to be threatened by ground-disturbing activities associated with the proposed Bowie Power Station Project, we recommend a finding of no historic properties affected.

If any human remains or funerary objects were to be unexpectedly discovered during construction, they should be reported to the director of the Arizona State Museum in accordance with the Arizona Revised Statutes § 41-865 and § 41-844.

CULTURAL RESOURCE SURVEY FOR THE PROPOSED BOWIE POWER STATION PROJECT, GRAHAM AND COCHISE COUNTIES, ARIZONA

INTRODUCTION

Bowie Power Station, LLC proposes to develop the Bowie Power Station Project near the city of Bowie, in Graham and Cochise counties, Arizona (Figure 1). In order to proceed with the project, Bowie Power Station has applied for a certificate of environmental compatibility (CEC) from the Arizona Corporation Commission's Power Plant and Transmission Line Siting Committee (Siting Committee).

The Arizona State Historic Preservation Act of 1982 stipulates that state agencies, such as the Arizona Corporation Commission (ACC), consider impacts of their programs on historical properties in consultation with the State Historic Preservation Office (SHPO). This report is intended to support the ACC's consultation with the SHPO about the proposed Bowie Power Station Project.

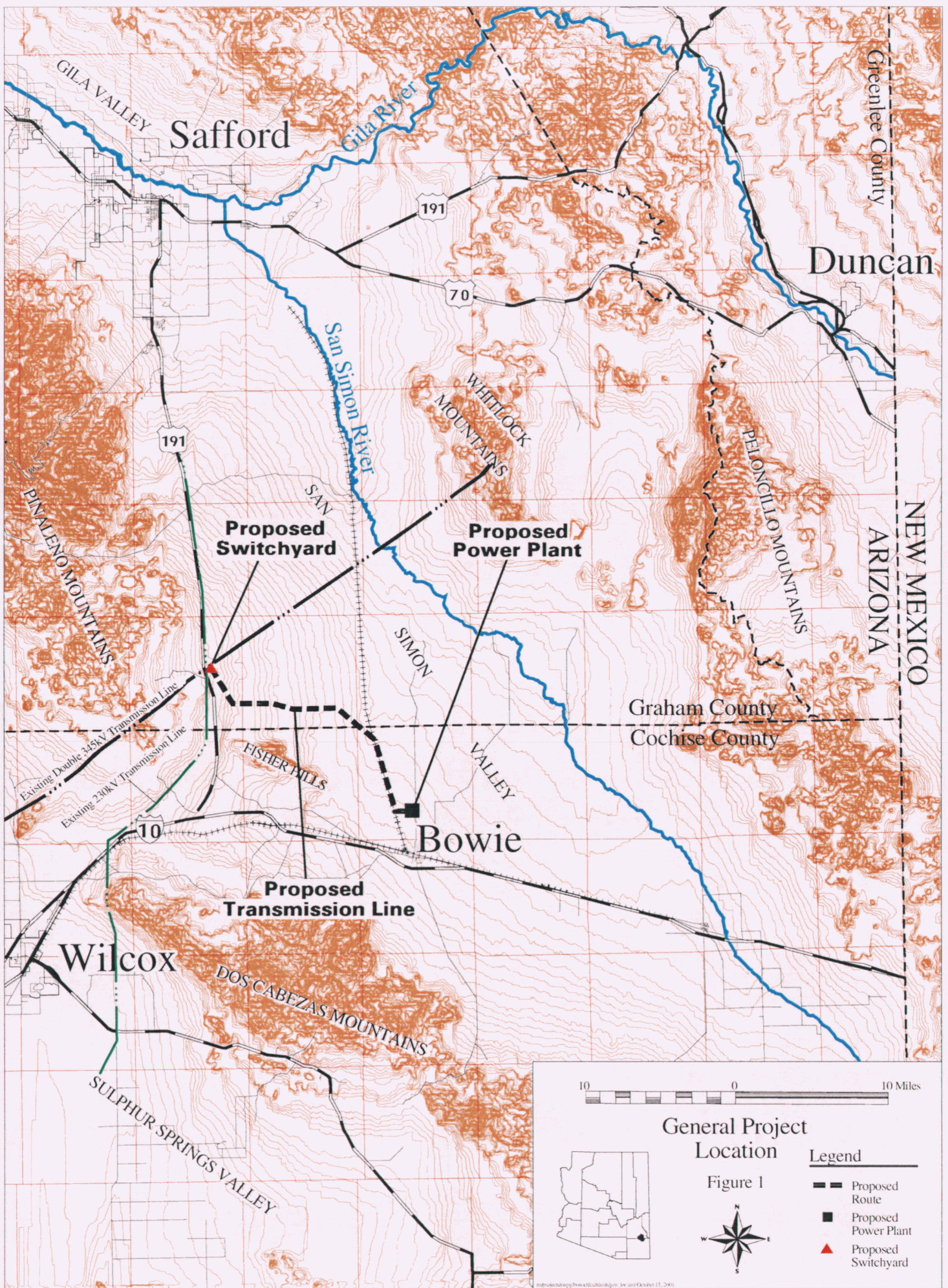
Project Description

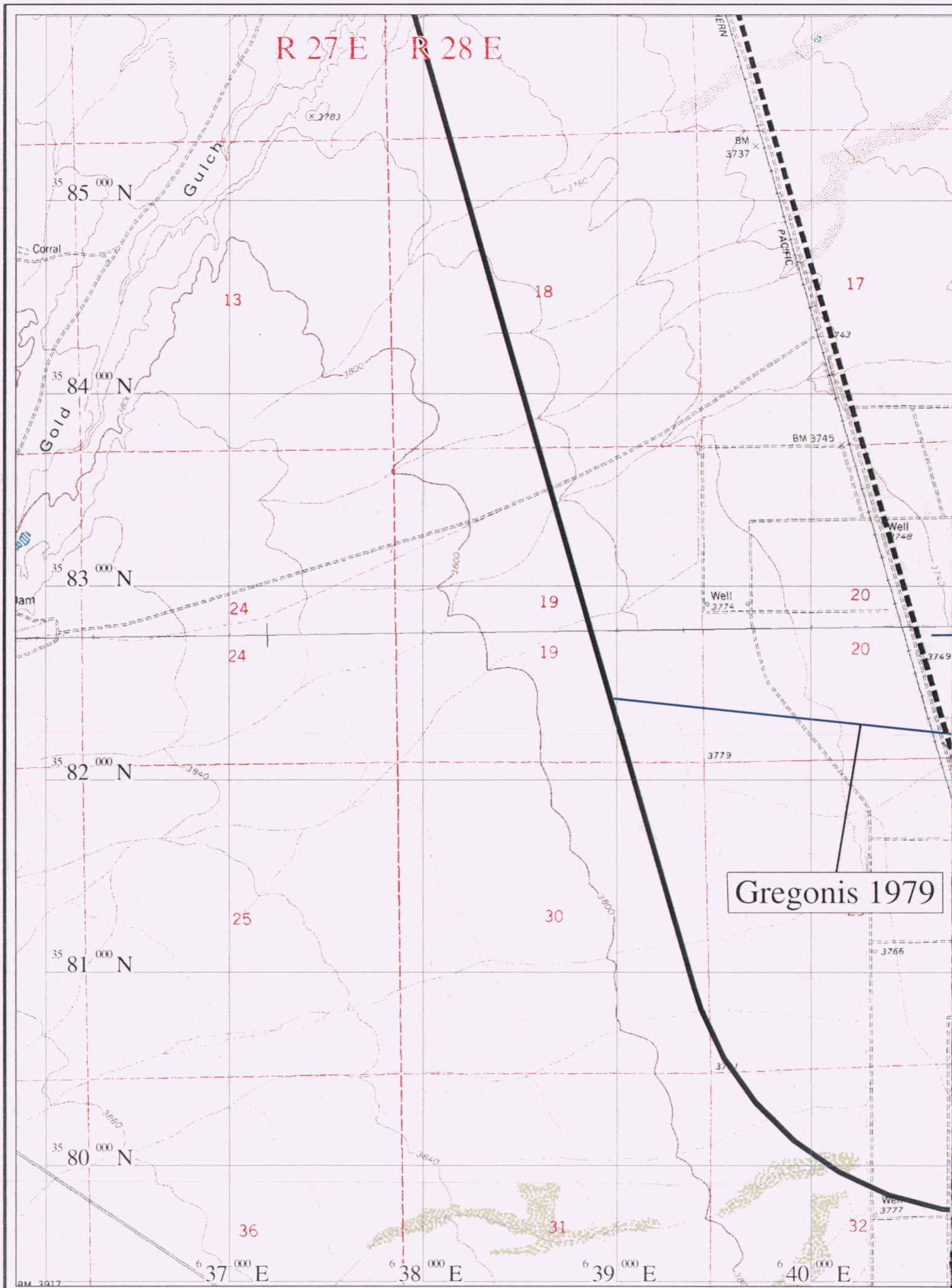
The proposed Bowie Power Station will be a natural gas-fired, combined-cycle generation station. The power station will include two 500 MW units each configured with two combustion turbines supporting one steam turbine, resulting in a total of four exhaust stacks. The power station will include a switchyard, control and administrative buildings, water-cooled condensers, storage tanks, and other ancillary facilities.

The proposed transmission line will extend from the power plant site approximately 14.3 miles in a northwesterly direction into Graham County, Arizona, to interconnect with TEP's existing Greenlee-Vail and Springerville-Vail 345kV transmission line at a point located near U.S. Highway 191. In the final stage of development, a 345kV/230kV switchyard, and a 230kV transmission interconnection with the existing AEPCO Red Tail-Dos Candados 230kV line, will be installed at that location.

Project Location

The Bowie Power Station is located on privately owned land in northern Cochise County, north of the Bowie town center. The proposed generation station is approximately 2 miles north of Interstate 10 (I-10) and just east of the Arizona Eastern Railroad, historically known as the GVG&N Railroad, within the western half of Section 28, Township 12 South, Range 28 East as depicted on the Bowie, Arizona 7.5-minute USGS quadrangle (Figure 2a-c).








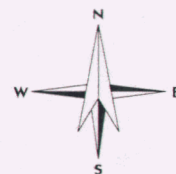


Previous Research

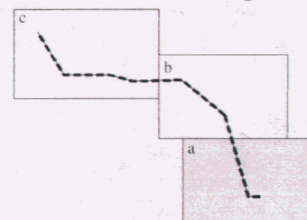
Figure 2a

Legend

-  Class 1 Study Area Boundary
-  Proposed Transmission Line Route
-  Proposed Power Plant
-  Previous Survey
-  Previously Recorded Site



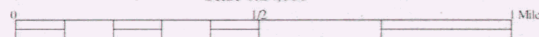
Index Map



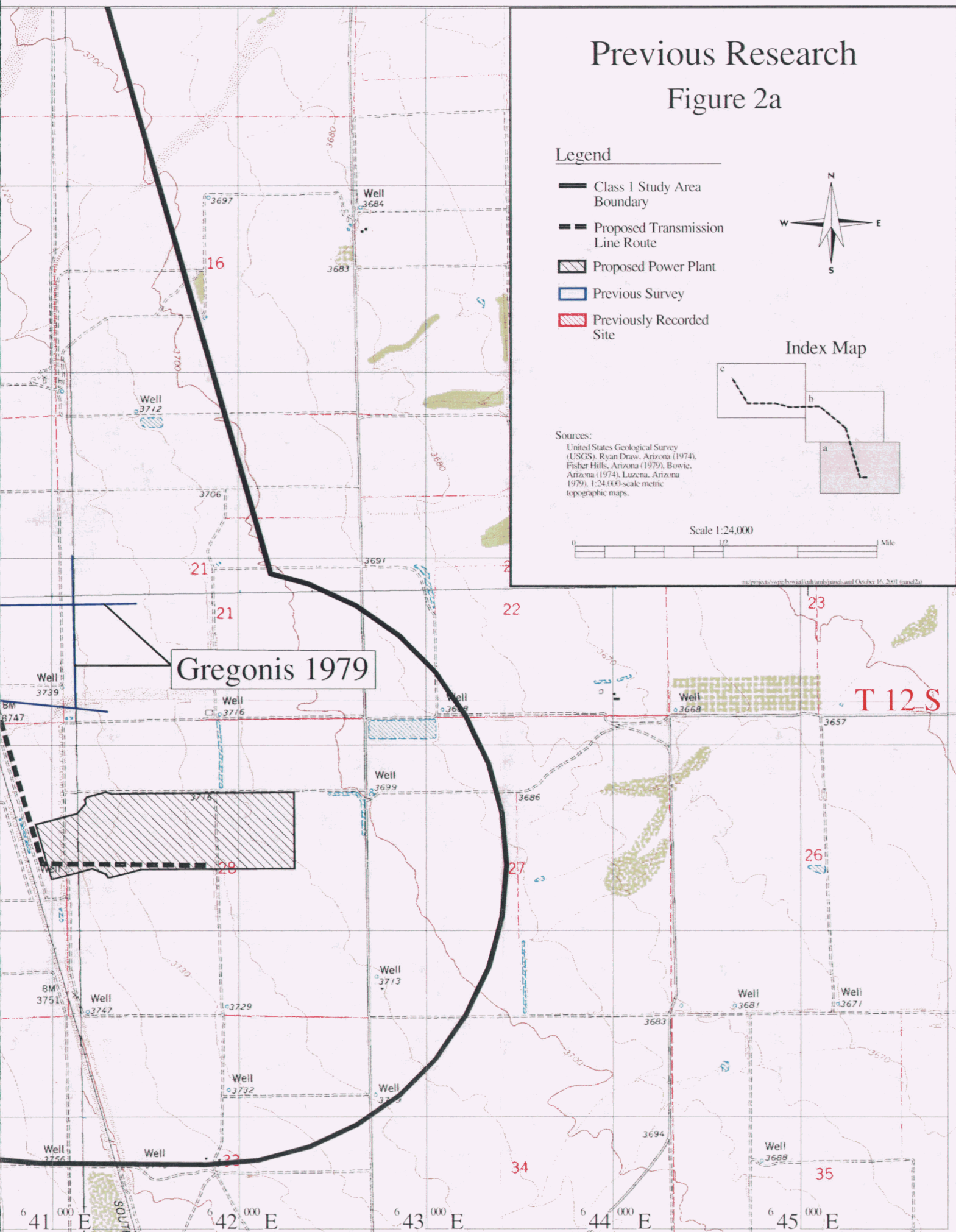
Sources:

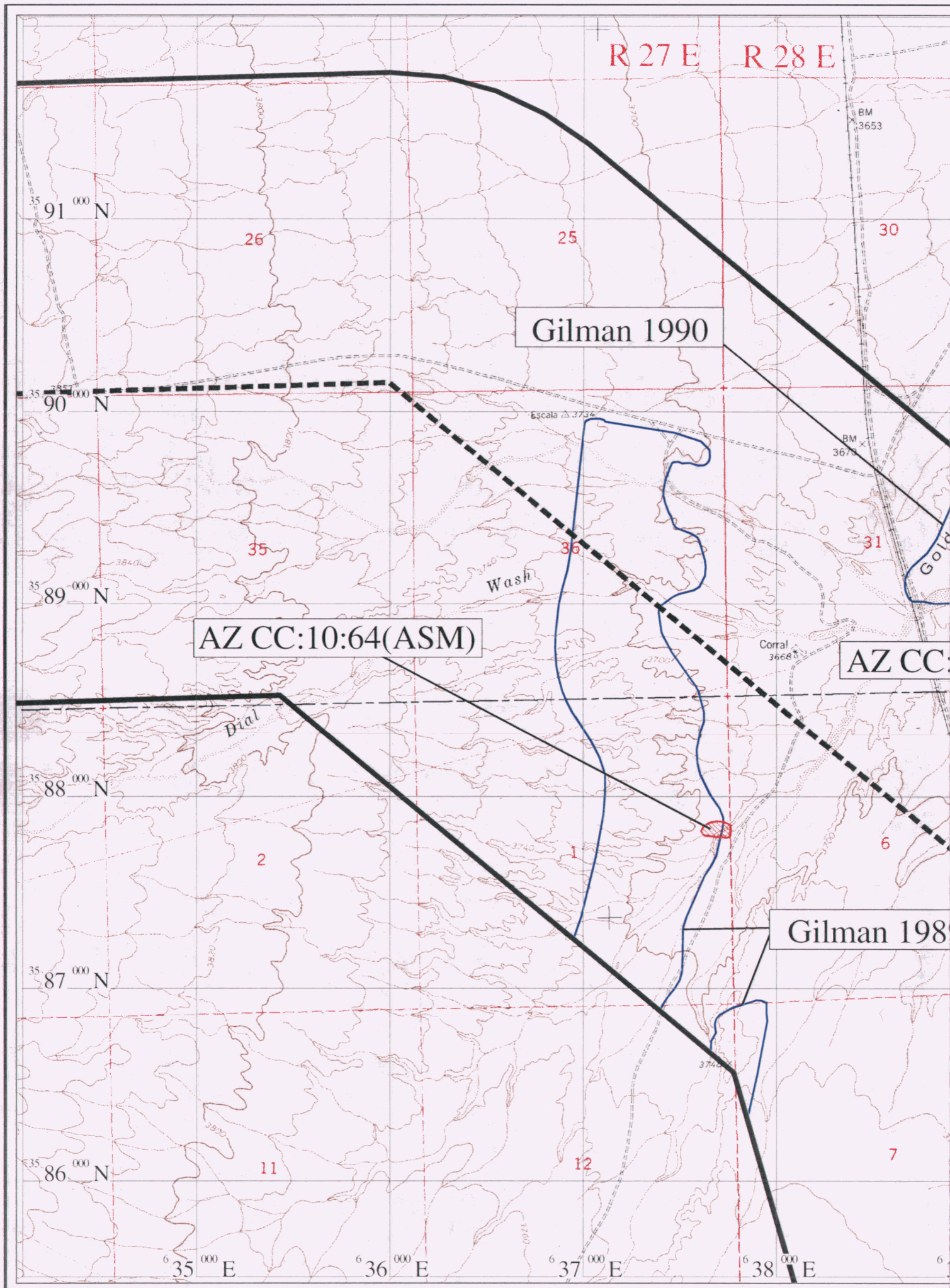
United States Geological Survey (USGS), Ryan Draw, Arizona (1974), Fisher Hills, Arizona (1979), Bowie, Arizona (1974), Luzena, Arizona (1979), 1:24,000-scale metric topographic maps.

Scale 1:24,000



m:\projects\arizona\bowie\fig2a.mxd, October 16, 2001 (mrs2a)





10:84(ASM)

GRAHAM CO
COCHISE CO

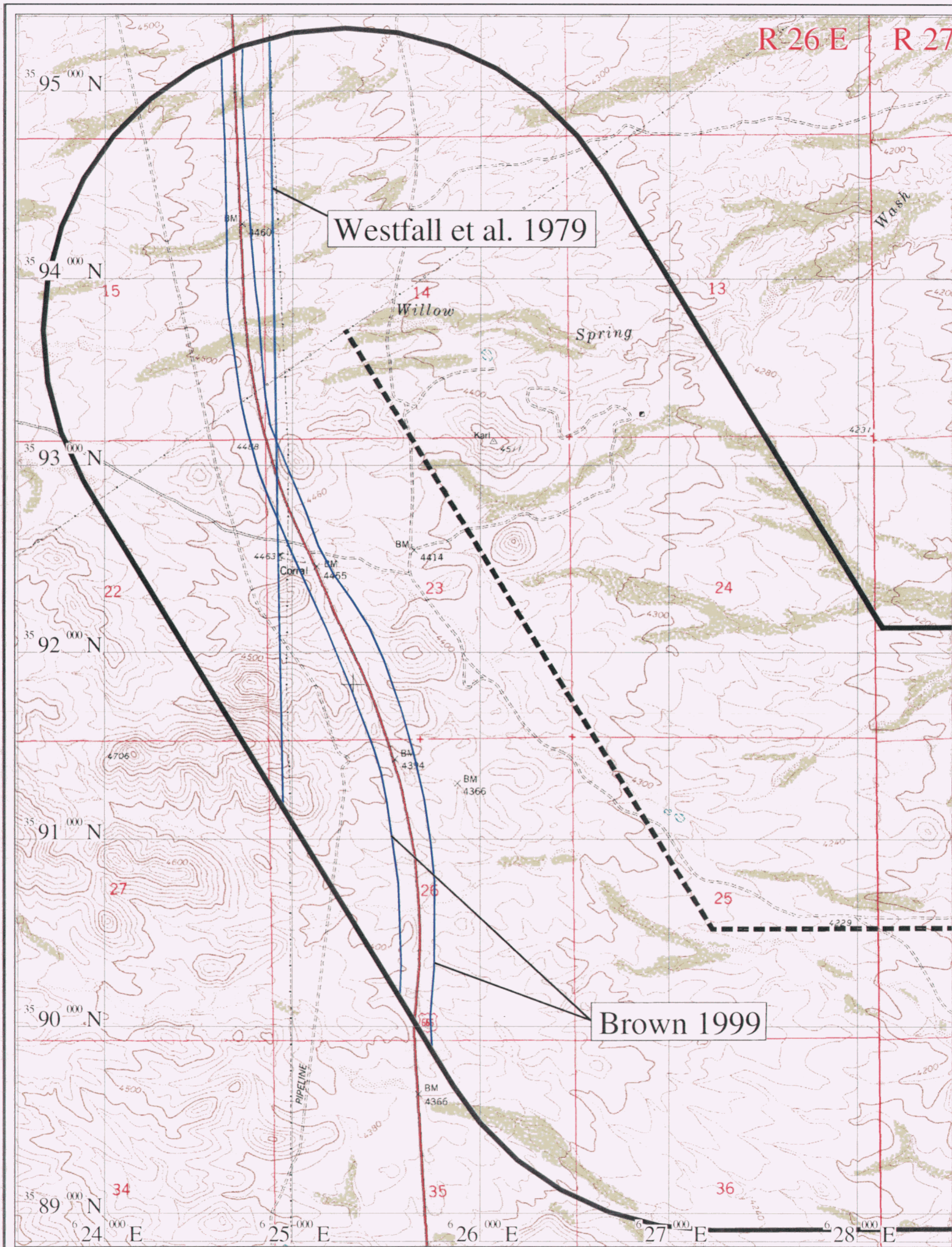
39 40 41 E

29 32 35 N

SOUTHERN

United States Geological Survey (USGS). Ryan Draw, Arizona (1974), Fisher Hills, Arizona (1979)
1:24,000-scale metric topographic maps.

<http://projects.swpc.bowdoin.edu/cult/aml/pand/s.html> October 16, 2001 (pand2b)

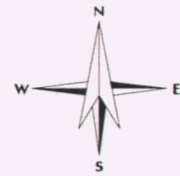


Previous Research

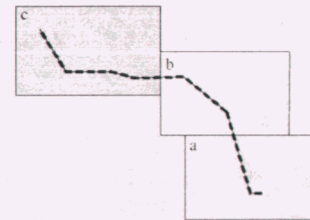
Figure 2c

Legend

- Class 1 Study Area Boundary
- Proposed Transmission Line Route
- Proposed Power Plant
- Previous Survey
- Previously Recorded Site



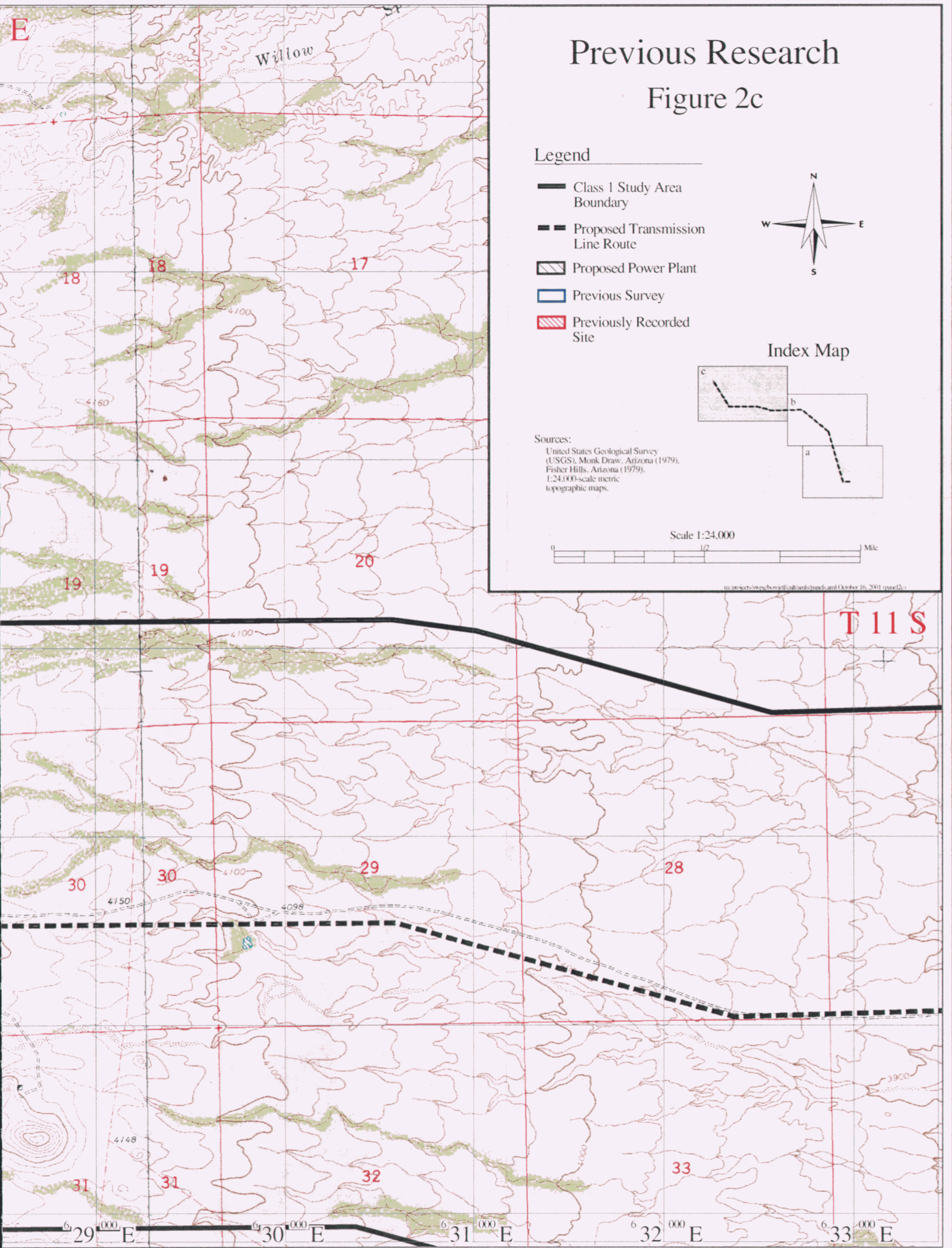
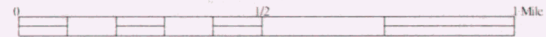
Index Map



Sources:

United States Geological Survey
(USGS), Monk Draw, Arizona (1979),
Fisher Hills, Arizona (1979),
1:24,000-scale metric
topographic maps.

Scale 1:24,000



The proposed 345kV transmission line route crosses privately owned land and land managed by the ASLD. This route heads west 1 mile from the proposed power station before turning north and paralleling the GVG&N Railroad until the Graham/Cochise County line where the route turns west until it intersects with Greenlee-Vail and Springerville-Vail 345kV transmission line at a point located near U.S. Highway 191. The proposed transmission line will be located in Sections 6, 7, 8, 17, 20, 28 and 29, Township 12 South, Range 28 East; Section 11, Township 11 South, Range 28 East; Section 26, 27, 28, 29, 30 and 36, Township 11 South, Range 27 East; and Section 14, 23, 24 and 25, Township 11 South, Range 26 East as depicted on the Bowie, Luzena, Fisher Hills, and Monk Draw 7.5-minute USGS topographic quadrangle.

The proposed 345kV/230kV switchyard will be located on land administered by ASLD within Graham County, within Section 14, Township 11 South, Range 26 East as depicted on the Monk Draw 7.5-minute USGS topographic quadrangle.

Scope of Survey

An intensive field survey of approximately 1,275 acres was conducted in accordance with Arizona State Museum guidelines. The survey areas included:

- approximately 780 acres of privately owned land encompassing the proposed plant site and adjacent parcels of land
- approximately 472 acres encompassing the proposed double-circuit 345kV transmission line route (346 acres of state land, 126 acres of private land)
- approximately 23 acres of state land encompassing the proposed 345/230kV switchyard site

A portion of the area of potential effect could not be surveyed due to dense vegetation and ground cover. Tall grasses within the area reduced ground visibility to zero (Photograph 1). This unsurveyed parcel is within the southern half of the SE¼ of Section 29, Township 12 South, Range 28 East.

A crew of four alternating archaeologists conducted the intensive pedestrian survey on March 5-9, May 3-4, May 7-10, and June 8, 2001. Kris Dobschuetz directed the fieldwork, while Glenn Darrington served as principal investigator. Kris Dobschuetz was assisted by crew chiefs Mary Morrison and Scott Wilcox, and crew persons Mark Beckett, Mike Schroff, and Paul Geiger. A total of 36 person-days of effort were devoted to the fieldwork.



Photograph 1
Unsurveyable Segment within the Power Station Survey Area

ENVIRONMENTAL SETTING

The environmental setting provides an important backdrop upon which prehistoric and historic events unfold. Since the environment affects the actions and interactions of all human groups, it is important to characterize the local environment as a background for the summary of the local culture history.

Physiographic Setting

The proposed generation station is located in southeastern Arizona within the San Simon River Valley, approximately 10 miles west of the San Simon River. Surrounded on the west by the Fisher Hills, on the south by the Dos Cabezas Mountains, and on the east by the Peloncillo Mountains, the Bowie Power Station sits on a flat expanse with little access to above ground water sources (Photograph 2). The transmission line routes are also located on a relatively flat area just north of the Fisher Hills (Photograph 3). The project is located in the Basin and Range Physiographic Province of interior western North America (Chronic 2000).

The Bowie Power Station site and transmission line route are located within the San Simon River Valley. The topography of the area is level with slopes of less than 1 percent within the vicinity of the proposed generation station. The proposed transmission line corridor is also level, but

more rugged in areas because of the close proximity to Fisher Hills. The topography of the region becomes more rugged approximately 8 to 10 miles south of the project area where the Dos Cabezas Mountains rise from the valley floor.



Photograph 2
Overview of the Location of the Proposed Power Station



Photograph 3
Overview of the Location of the Proposed Transmission Line Route

Climate

The project area is located near the northern edge of the Chihuahuan Desert. Most of the Chihuahuan Desert lies within Mexico, with only small amounts in New Mexico and Arizona. Within Arizona, the Chihuahuan Desert occupies a small portion of southeastern Arizona within the San Simon Valley. Although it is the largest of the three creosote bush dominated deserts in North America, the Chihuahuan Desert is also the least known biome (Brown 1994).

Winter temperatures within the desert are cool, while summer temperatures are extremely hot. Bowie reports an average winter temperature of 45 degrees Fahrenheit in January reaching the mid to low 80s by June. The cool summer temperatures of Bowie may be the result of its location on the northern edge of the desert and its elevation of 3,730 feet (1,138 meters) above sea level. Rainfall within this environment usually occurs during July and August in the form of a monsoon. However, some rain falls during the winter months. Average rainfall in the Bowie area is approximately 12 inches per year.

Natural Vegetation and Wildlife

The proposed project site and route lies within the Chihuahuan desert scrub subdivision of the Warm Temperate Desert lands (Brown 1994). Local vegetation is dominated by creosote bush. Vegetation observed within the Bowie area include mesquite bush, saltbush, and miscellaneous weeds.

Animal species within the Chihuahuan desert scrub include small mammals and birds such as gophers, rats, mice, rabbits, and shrews, quail, sparrows, doves, and wrens. Larger animals that have been identified within the desert are mule deer and bighorn sheep. During our survey we did not observe any animals in the fields; however, several species of birds were present in the area.

Within any desert environment, water is always an issue. This is also the case for the Bowie area. Ecologically, the lack of water within the area may be the result of the mountains surrounding the Bowie basin area that create a rain-shadowed basin effect. Historically, the area was devoid of surface water. For this reason agriculture did not develop in the area until wells could be drilled. The nearest available surface water is the San Simon River.

CULTURAL HISTORY

The history of research in southeastern Arizona, specifically in the San Simon Valley, is briefly reviewed and a general cultural history of the region as it is currently understood is presented. Few studies have been conducted within the San Simon Valley; however, a few larger scale studies have been conducted in southeastern Arizona. These projects include Statistical Research's study of the Western Army National Guard Aviation Training Site (Whittlesey et al.

1994) and the Bureau of Land Management's Class I Cultural Resource Inventory of Southeastern Arizona (Brontisky and Merritt 1986). In addition to these broad scale studies of the area, there is one well-known study within San Simon Valley. Patricia Gilman has conducted investigations within the valley since the late 1980s, focusing her studies on issues of mobility and sedentism (Gilman 1997).

The cultural history of southeastern Arizona is divided into five divisions that correspond roughly to changing lifeways and adaptations. Humans are constantly adapting to their environment and inventing or adopting new technologies. Due to the nature of human adaptation, scholars have had to create arbitrary breaks between different time periods. In general, these breaks represent a significant change in lifestyle. These divisions include the Paleoindian, Archaic, Ceramic, Ethnohistoric, and Historic periods.

In the recent past, Paleoindian and Archaic populations have been described as traditions that rely primarily upon lithic materials, are believed to have been mobile or semi-sedentary, and have no ceramic technology. During the Archaic Period, humans adapted to changing environments and adopted several new technologies. While they still are believed to be relatively mobile, new evidence has suggested that the Archaic people in southeastern Arizona were producing ceramics (Heidke 1999). A more refined distinction between the Archaic and the Paleoindian periods would include less intensive agricultural dependence, more mobility, and a less highly structured social organization. A division between the Ceramic and the Ethnohistoric periods is generally identified with the decline and abandonment of Classic period Ceramic cultures and the migration and/or development of new cultural groups with different technologies. The division between the Ethnohistoric and Historic periods is generally understood to be point when written records concerning the area become available. The Ethnohistoric Period refers to aboriginal or Native American cultural traditions, whereas the Historic Period refers to non-aboriginal (Euro American) cultural traditions.

The San Simon Valley is an area that was exploited by a variety of cultural groups throughout its history. It is somewhat difficult to ascertain whether identified material remains are associated with indigenous peoples or whether the remains represent peoples who have migrated to the area. Currently, it is believed that the earliest identifiable cultural group in this area was the Mogollon. Throughout the course of history, we see Hohokam, Ancestral Pueblo, and Salado cultural traits appear. The appearance of these cultural traits at different periods probably represents an expansion or migration of each group, since the Hohokam, Ancestral Puebloan, and Salado did not originate in this area.

Paleoindian Period (11,500 BC to 7500 BC)

The earliest occupation in the region is known as the Paleoindian Period. These groups hunted large game animals, collected native plant food, and were highly mobile. The populations during this time remained fairly small and dispersed. Throughout the Southwest, the Paleoindian Period

is recognized by the presence of large fluted, lanceolate, projectile points. Two common traditions are associated with this period, and are known as the Folsom and Clovis traditions.

The Clovis tradition predates the Folsom tradition and is associated with hunting large mammals such as mammoths and mastadons. Clovis points are large spear points that have been partially fluted. The Folsom tradition, associated with hunting somewhat smaller animals such as bison, probably descended from the Clovis tradition. Much like the Clovis tradition, the Folsom point retains and expands the characteristic fluting trait of the earlier Clovis point.

Although no Clovis points were identified within the San Simon Valley, several Clovis points were found in association with the remains of mammoths at several sites in the San Pedro Valley. Some of the first well-known Clovis sites in the Southwest were identified within the San Pedro Valley (Cordell 1984). It is also significant to note that although there is a fairly large amount of Clovis Points identified in this area, there are no Folsom point (Mabry 1998).

Archaic Period (7500 BC to AD 300)

The transition from the Paleoindian Period to the Archaic Period is marked by the extinction of the large Pleistocene mammals. While this is not the only factor influencing the shift from large-scale hunting to small-scale hunting and plant processing, most scholars believe that this was at least one factor in the subsistence shift that characterizes the subsequent Archaic Period. During the Archaic Period, people began to focus on hunting smaller animals and collecting a wider variety of plant resources. Archaic groups also adapted their social organization to a changing social environment by aggregating into larger social groups. Although only a few Cochise sites have been found in the San Simon Valley (Sayles 1983), numerous sites have been identified in the San Pedro Valley, located to the west of the San Simon Valley.

Information on the Archaic cultures in southeastern Arizona is often the result of accidental discovery by hikers and ranchers who find artifacts eroding out of stream banks. The Gila Pueblo investigated a few sites that were identified from arroyos that had been created from eroding streams. During the 1940s, Sayles and Antevs investigated the area and derived three phases to the Cochise culture: Sulpher Springs, Chiricahua, and San Pedro. The Cochise culture was not fully accepted by the archaeological community until the excavation at Ventana Cave by Emil Haury (1950). During Haury's excavation of Ventana Cave, the presence of the San Pedro and Chiricahua phases were identified in the cultural sequence. Even after that, it took the discovery of the Lehner and the Naco kill sites with radiocarbon dates to support the antiquity of the phases and their association with extinct mammals (Haury 1983). Radiocarbon dates from Danger Cave gave evidence to the antiquity of the Cochise culture, boosting its credibility. The University of Arizona gradually took over the Gila Pueblo field program. So much information was obtained by the 1950s and 1970s that Sayles and Antev defined a new phase, the Cazador stage, in the cultural sequence of the Cochise culture. The Cazador phase is between the Sulpher Springs and the Chiricahua phases. However, recent examinations of the Double Adobe site by Waters (1986) concluded that the Cazador assemblages belong to the same stratum as the Sulpher

Springs phase. This information provides strong evidence that the Cazador phase is not a separate phase, but rather should be subsumed under the Sulpher Springs phase.

The Archaic Period within southeastern Arizona can roughly be divided into the Sulpher Springs, Chiricahua, San Pedro, and Cienega phases of the Cochise Culture. These phases cover the majority of archaic cultural sequence for southeastern Arizona; however, there are gaps within the established sequence. The information that is available for the above phases is discussed below.

The Sulpher Springs phase (7300 BC to 5100 BC) was defined by Sayles and Antevs on the basis of six sites within the Whitewater Draw area (Mabry 1998). These types of sites were first identified within arroyo walls. In fact, the type site for the Sulpher Springs phase, AZ FF:10:1 (ASM), is in an arroyo (Sayles 1983). The material assemblage associated with this phase focuses primarily upon lithic and ground stone tools. Items recovered from contexts within the Whitewater Draw area include flat milling stones, small hand grinding stones, flaked unifacial scrapers, other unifacial tools, firecracked rocks, and burnt and broken animal bone. Sites dating to the Sulpher Springs phase have been associated with extinct Pleistocene megafauna (Mabry 1998). Not much information is known about the mortuary practices associated with this phase of the Archaic Period. One Sulpher Springs burial has been excavated by Waters (1986). Although the burial was disturbed, it was possible to identify some characteristics of the burial. The individual was interred in a tightly flexed position and was not associated with any grave goods (Waters 1986).

Material remains identified to the Chiricahua phase (5100 BC to 1500 BC) were first identified in a clayey cienega near the Chiricahua Mountains (Sayles and Antev 1941; Sayles 1983). During this period, the climate was warmer and drier than the previous period and modern animals species were present. Artifacts identified with the Chiricahua phase include hand stones, shallow basin metates, flaked tools, hammer stones, and pressure flaked projectile points. Milling stone, cairns, burials, and structures may also be part of the Chiricahua assemblage (Mabry 1998). For Sayles and Antevs (1941), the Cochise represented a culture focused on plant processing rather than primarily on hunting. Sayles has identified two variants of the Chiricahua phase of the Cochise culture. The first variant is the one that developed into the proceeding San Pedro phase in the lowlands, while the other is a mountain variant that maintained the Chiricahua phase until the introduction of pottery (Sayles 1983).

The next stage in the Cochise culture is the San Pedro phase (1500 BC to AD 1). The San Pedro phase material has been identified in a number of settings including arroyos, caves, and surface contexts. Artifacts identified with the San Pedro phase include features such as houses slightly below ground level, large bell-shaped pits, hearths and possible cooking pits, and a wide range of chipped stone tools, choppers, hammer stones, drills, and gravers (Sayles 1983). The presence of houses, storage pits, definite burials, and large occupation areas suggest a more permanent occupation during the San Pedro Phase (Sayles 1983). Recent investigations of Late Archaic projectile points in southern Arizona have concluded that San Pedro points, unlike Cienega points, have been found to be long-lived and non-temporally sensitive (Sliva 1999). This means

that San Pedro points are not as useful as a diagnostic tool as Cienega points which are temporally sensitive.

The Cienega phase is the last phase of the Cochise culture (AD 1 to AD 300). Not much information is known about the Cienega phase. However, information on Late Archaic sites indicates that architecture is a distinctive feature of Late Archaic habitation sites. By the Late Archaic, pit houses are more formally constructed and occur in higher frequencies (Whittlesey et al. 1994). Other features of Late Archaic sites include roasting pits and hearths. Mortuary treatment of Late Archaic sites includes tightly flexed inhumations without grave goods (Whittlesey et al. 1994).

Ceramic Period (AD 300 to AD 1400)

The Ceramic Period in this area can best be described as a cultural cross roads. The San Simon River served as a natural corridor for the movement of people and ideas. During this period, groups of people with different ceramic traditions moved in and around the San Simon Valley. Sites in this area often have a mixture of traits from different cultural traditions. These types of sites, in addition to a lack of adequately surveyed areas, create many opportunities for future research in the area.

The cultural origins of the people inhabiting the area during the early Ceramic Period are still a matter of debate. As mentioned above, the occurrence of artifacts representing more than one distinct cultural group within a site creates some confusion. In order to explain these situations, scholars have adopted one of three basic positions concerning the cultural origins of the people inhabiting southeastern Arizona during the Ceramic Period. These positions include (1) Hohokam sites with a strong Mogollon influence; (2) Mogollon sites with pronounced Hohokam veneer; and (3) an indigenous group known as the Ootam culture.

While still a debated question, the general consensus is that the San Simon Valley inhabitants were associated with the Mogollon. Characteristics common to all branches of the Mogollon vary according to time period but include (Whittlesey et al. 1994):

- **Ceramics:** polished brown plain ware, red-slipped ware, red-on-brown decorated pottery, and corrugated pottery (created by a coil and scrape method)
- **Other artifacts:** three-quarter grooved axes in later prehistory
- **Architecture:** deep pit houses (round first, then rectangular) with lateral entryways, unpatterned arrangement of pit houses in a village; later, a planned village layout focused on inward facing plazas with rectangular kivas in pueblo room blocks
- **Subsistence:** emphasis on hunting and gathering supplemented with agriculture

- **Burial treatment:** extended inhumations and vertical-occipital head deformation

Problems in the cultural classification of these sites probably influenced Sayles (1945) to label the Mogollon inhabitants of southeastern Arizona as the San Simon branch of the Mogollon. Around the same time, the Amerind Foundation created a Dragoon cultural sequence for the area based upon excavations from the Texas Canyon, Gleeson, and Tres Alamos sites (Fulton and Tuthill 1940; Tuthill 1947). At the time that the cultural sequences were being worked out, there was an emphasis upon chronology building. Thus, the cultural sequences are heavily influenced by changes in ceramic style. While both of the sequences are relatively similar, they focus on different names for the ceramic types identified within their areas. The Amerind Foundation's identification of the Dragoon cultural sequence is based upon sites that are closer to the San Pedro River; whereas Sayles' definition of the San Simon branch of the Mogollon is based upon work at the San Simon and Cave Creek sites, which are closer to the San Simon River. The chronology for the Ceramic Period will include a combination of both sequences and will be divided into Early, Middle, and Late Ceramic periods.

Early Ceramic Period (AD 300 to AD 750)

The earliest Mogollon Period in southeastern Arizona is characterized by plain brown pottery, red-slipped pottery, and pit houses. Within the San Simon Valley, the chronology for this period includes the Penasco phase and Pinaleno/Dos Cabezas phase. Instances where there are more than one name for a phase represents the combination of the San Simon and the Dragoon sequences. The exception to this is the Pinaleno/Dos Cabezas phase which was originally two phases within the San Simon sequence that were recently combined into one phase.

Penasco Phase

Excavations from the Cave Creek and San Simon villages label their earliest component the Penasco phase (Sayles 1945). No chronometric dates have been identified for this phase in the San Simon area; however, tree ring dates have been confirmed for sites in the Bluff ruin in Forestdale (Haury 1985). Ceramics for the period include plain brown and red-slipped brown pottery. Tempered with sand, these vessels were constructed using the coil and scrape method. Architecture from the San Simon village during this phase included pit houses that were rounded or oval-shaped with short lateral entryways and central roof supports (Sayles 1945). Burials at this time were flexed inhumations often associated with a cairn of milling stones. Scholars have emphasized the similarity of material culture between the preceding Archaic Period and the Penasco phase (Whittlesey et al. 1994). The main difference between the Archaic and the Penasco phase is the inclusion of ceramics, since the chipped stone tools assemblage appears to remain unchanged from the Late Archaic Period.

Pinaleno/Dos Cabezas Phase

This phase is marked by the appearance of decorated red-on-brown pottery. The decoration for this pottery is defined as broad-line red-on-brown. The broad-line decorative pottery style has a wide distribution as evidenced by a similar pottery style in Casas Grandes, Mogollon, and Hohokam groups (Heckman et al. 2000). Originally defined as two types, further research identified these types as co-existing together suggesting that they may be variants of the same type. This may explain why not many houses were originally classified to the Dos Cabezas phase (Whittlesey et al. 1994). House styles during this time become more rectangular than the preceding period with an addition of a stepped entry and peripheral holes added to the central post holes. Mortuary practices indicate a change to seated, flexed inhumations.

Middle Ceramic Period (AD 750 to AD 1000)

It is during the Middle Ceramic Period that the distinctive cultures that we recognize as the Mogollon, Anasazi, and Hohokam appear. During this period, pottery within the different cultural groups undergoes similar developmental changes. These changes begin with broad-line red-on-brown geometric styles, which develop into thin-lined red-on-brown geometric styles, and finally the adoption of red-on-white styles. Phases identified within the Middle Ceramic Period include the Galiuro/Cascabel, Cerros/Tres Alamos, and Encinas Phase.

Galiuro/Cascabel Phase

During this time period, the San Simon and Dragoon cultural sequences diverge. Within the San Simon chronology comes the Galiuro phase, whereas the Cascabel phase belongs to the Dragoon chronology. These two phases both share the fine-line red-on-brown decoration style. Pottery also includes red-slipped brown ware, known in the San Simon chronology as San Francisco Red and in the Dragoon chronology as Dragoon Red. Architecture changed very little during this phase; retaining the sub-rectangular stepped entry pit house from the previous phase. Burials continue to include flexed inhumations with the individuals placed either on their backs or on their sides.

Cerros/Tres Alamos Phase

The Cerros/Tres Alamos phase is characterized by the emergence of red-on-white painted pottery. Red-on-white pottery occurs with existing red-on-brown ceramics. First identified by Fulton at the Texas Canyon site, this pottery type was also identified at the Gleeson and Tres Alamos sites (Whittlesey et al. 1994). Cerros and Tres Alamos are Red-on-white pottery types within the San Simon. Recent studies have suggested that these two styles should really be classified as one style. At San Simon Village, pit houses are larger and more rectangular than earlier structures (Sayles 1945). Construction alterations include paired auxiliary roof supports

along a central post. Mortuary practices continue to be flexed inhumations; however, the placement of the individual changes from the side to the back (Sayles 1945).

Encinas Phase

Encinas marks the end of the San Simon sequence. The predominant pottery style is the Encinas Red-on-brown. There is no equivalent phase in the Dragoon sequence (Whittlesey et al. 1994). Black-on-white pottery begins to appear in the Mimbres area by this time, yet there is no local version of the Black-on-white pottery. Pit houses during this phase were rectangular with short, inclined, stepped entryways. The interior construction has paired central roof supports. Mortuary patterns change during this period to include cremations in covered vessels (Sayles 1945). However, flexed inhumations continue with individuals placed on their sides and well as their backs.

Late Ceramic Period (AD 1000 to AD 1400)

Dramatic changes in architecture, demographic shifts, and unprecedented complexity characterize the Late Ceramic Period. During this period changes took place in the social organization, subsistence, settlement patterns, and ceremonialism across a vast portion of the Southwest.

Mogollon Pueblo Period (AD 1000 to AD 1150)

A dramatic change in architecture marks the beginning of the Mogollon Pueblo Period. Surface architecture and the end of the local red-on-brown ware Ceramic tradition define this period. Although not many sites dating to this period have been identified within southeastern Arizona, the surface architecture is generally associated with the Classic Period Hohokam (Whittlesey et al. 1994).

The inclusion of the Mogollon within this Pueblo Period is a matter of debate. Traditional cultural histories end the Mogollon at AD 1000. Adopting a traditional cultural view, Haury maintained the distinction between pit house building and pueblo building Mogollon throughout his career (Whittlesey et al. 1994). Additional studies by Reed (1948) and Johnson (1965) have created the Western Pueblo Concept (Whittlesey et al. 1994). This concept recognizes the Mogollon roots of the Western Pueblo people as well as their distinction from the Eastern Pueblo people.

The Salado Phenomenon (AD 1150 to AD 1400)

After about AD 1150, the Mogollon cease to be a presence within southeastern Arizona. Archaeological evidence suggests that the sites become more closely associated with the Hohokam. Such features include rectangular or subrectangular, adobe-lined pit structures, and above ground structures of cobble masonry or cobble-reinforced adobe construction. Enclosing walls are also present. Ceramics attributed to the area include Tanque Verde Red-on-brown and corrugated ceramics. Tanque Verde Red-on-Brown is a Tucson basin variant within the Hohokam ceramic assemblage. Corrugated ceramics, not generally associated with the Hohokam, are also present at these sites.

The beginning of the Classic Period within the Hohokam world was full of changes similar to the changes that took place in the Mogollon. Hohokam pit house architecture changed to above ground adobe architecture, pottery became tri-colored (polychrome pottery), and burials included inhumations. In order to explain these changes, the archaeologists at Gila Pueblo proposed the Salado migration theory. This theory speculated that a group of Puebloan people from the Little Colorado River made their way southward to the desert and coexisted peacefully with the Hohokam (Haury 1945). Today, the Gila Pueblo model is not widely accepted. Instead, additional research has created new hypotheses to explain these changes. Recent investigations into the Salado phenomenon have replaced the Gila Pueblo model with the notion of an indigenous development as a mechanism of change (Doyel 1981).

Within the Safford valley, one Late Classic Period site has been identified. The Curtis site is a cobble-reinforced adobe structure consisting of two large room blocks with enclosed plazas (Heckman et al. 2000). The amateur archaeologists who excavated the site identified storage, habitation rooms, and mealing bins (Whittlesey et al. 1994).

A wide variety of ceramics from this period have been identified from sites within southeastern Arizona. Non-local ceramics include types from the Reserve, Casa Grandes, Point of Pines, and the Tucson areas (Heckman et al. 2000). By the late 1300s most of the communities were abandoned.

Ethnohistoric Period (AD 1400 to AD 1540)

The abandonment of large areas of the Southwest during the late thirteenth and fourteenth centuries were followed by the aggregation of large communities in areas that previously were sparsely populated. The Ethnohistoric Period includes the time after the abandonment until the entrance of the Spanish. This period focuses on the indigenous populations. Since no prehistoric sites have been securely dated after 1450, there is a considerable amount of time that is not accounted for between the Ceramic Period and the Ethnohistoric Period.

Indigenous groups occupying the southeastern portion of Arizona during this period include the Sobaipuri near the Santa Cruz and San Pedro rivers, Apache near the eastern border of New Mexico and Arizona, and Jocomé in the far southeastern portion of Arizona.

The Sobaipuri were an indigenous group that are ancestral to the Tohono O'odam and probably direct descendants of the Classic Hohokam culture of the Tucson Basin and lower San Pedro Valley (Gilpin and Phillips 1999). Sobaipuri houses were made of reed mats (Bolton 1984), and it is generally assumed that Sobaipuri habitation sites are rancheria-style settlements (Whittlesey et al. 1994). Like some other indigenous peoples, the collapse of the Sobaipuri culture was the result of European disease, warfare with Apaches, and Spanish colonization.

Two groups of Apaches, the Western Apache and the Chiricahua Apache, occupied the eastern border of New Mexico and Arizona. These nomadic rancheria dwelling hunters and gatherers came late to the region (Whittlesey et al. 1994). Difficulties arose between the Apaches and the Spanish and Pimas living in the area. After extended contact with Europeans, any warfare conducted by the Apaches was to avenge previous injuries, whereas, raiding provided a means to acquire grain and livestock (Basso 1983). Identification of Apache sites is notoriously difficult because of their ephemeral nature. In addition, Western Apaches are known to have been aware of the location of prehistoric sites in their area (Gregory 1981). Using this knowledge, the Apaches were able to "hide" more effectively and also to acquire items from these locations.

The Jocomé and Jano are two groups of nomads that in protohistoric times wandered into southeastern Arizona and southwestern New Mexico. Bolton (1984) notes that the Janos were enemies of the Sobaipuri. It appears that when the Apaches entered southeastern Arizona they took over the existing feud between the village dwellers and the nomadic groups (Gilpin and Phillips 1999). Although no information on the Jocomé or Jano daily life is known, evidence is available for their close relatives, the Manso (Gilpin and Phillips 1999).

Historic Period (AD 1540 to AD 1950)

The Ethnohistoric ends with the entry of the Spanish explorers into Arizona. Three early Spanish explorations are particularly relevant because they occurred within southeastern Arizona. These include the expeditions of Cabeza de Vaca, Fray Marcos de Niza, and Coronado. The earliest expedition to explore southeastern Arizona was the Cabeza de Vaca who traveled through a small portion of southern Arizona on his trek from Florida to Mexico between 1528-1536. Following stories of the wealth of Cibola, Fray Marcos de Niza and Estevan set out to investigate the stories. Estevan's death in Zuni caused Fray Marcos de Niza to retreat back to Mexico where he promptly spread rumors of the wealth of Cibola. In 1540, Francisco Vasquez de Coronado led an expedition to explore the Southwest. Coronado wandered around the Southwest until 1542 when he returned to Mexico and reported that there was little wealth to be found in the area.

The influence of the Spanish explorers on the indigenous populations was substantial. European diseases created wide-spread death and depopulation among local populations. The

missionization of the local populations by the Spanish resulted in the displacement of traditional cultural values as well as heightened the conflict between the resident tribes.

After the Spanish explorers and missionaries came the Mexicans. The Mexicans won their war of independence in 1821 and declared themselves a sovereign territory. Several established Spanish missions refused to declare allegiance to Mexico and so a period of demissionization occurred (Whittlesey et al. 1994). Increased Apache raiding resulted from the removal of Spanish troops and missionaries (Whittlesey et al. 1994). It was the increased Apache influence that precluded the expansion of European settlement.

It was not until the 1820s when the first Anglos began to filter into Arizona. Explorers and trappers such as James Ohio Pattie traveled through Arizona following the Gila and Salt rivers. The war with Mexico served as a means to open corridors through Arizona (Whittlesey et al. 1994). Colonial Kearney is credited with opening the Gila Trail on his march to suppress Mexican settlements in the greater Southwest (Walker and Bufkin 1979). The Gadsden Purchase incorporated the southern part of Arizona south of the Gila River. The Military were present in the territory throughout the Civil War, although federal troops left with the start of the war (Whittlesey et al. 1994). Apache hostility toward Anglos reached new peaks after the federal troops left.

Fort Bowie, a US Army post, was established in 1862 to guard over the rugged Apache Pass that divides the Chiricahua and Dos Cabezas mountains. Fort Bowie was located near Apache Pass because it guarded one of the only reliable water sources within 30 miles (Walker and Bufkin 1979). The prominence of the post is attributed to its strategic location that provided one of the few reliable watering holes for travelers on their way to California (Herskovitz 1978). The area near Fort Bowie was one of the most dreaded and dangerous portion of the stage coach road, where numerous Indian battles took place (Barnes 1988). The fort served as headquarters for General Crook's campaigns against the Apache (Herskovitz 1978). With the building of the Southern Pacific Railroad in 1881, the Fort lost much of its importance (Barnes 1988). Fort Bowie survived for a few more years after the surrender of Geronimo, but it ceased to be an active military reservation in 1894 (Herskovitz 1978).

The population of southern Arizona doubled between 1880 to the 1900s as a result of migration into the territory (Meinig 1971). Bowie was originally established as a station for the Southern Pacific Railroad in the 1880s. The town of Bowie was an important stop along the southern transcontinental railroad. Based upon General Land Office Maps and Sanborn Fire Insurance Maps for the town of Bowie, several railroad related cultural resource items were known to have been in existence (Garrison et al. 1989). These items include a "section house, a hose cart, depot, hotel, freight house, tent on frame, rooms in a row, laundry, office, storage, two 50,000 gallon water tanks, supply house, office pump house, 5 dwellings, dwelling of old ties, oil tanks, [and a] depot hotel rooms across street" (Garrison et al. 1989:48). According to a local historian, the Bowie railroad depot no longer exists (Mr. William Hoy, Personal Communication 2001). In addition to the importance of the transcontinental railroad, a branch line was also constructed in Bowie. The branch line diverged north from Bowie toward Globe. The branch line is the

GVG&N Railroad, which began construction in 1894 (Garrison et al. 1989) and was completed in 1899 and played an important part in enhancing Bowie's significance.

Ranching was important in the Bowie area until the advent of deep well drilling equipment. Once water could be extracted from deep underground, ranching gave way to farming and agriculture. The early 1900s witnesses the extraction of marble from the eastern part of the military reservation located within the Chiricahua Mountains.

RECORDS REVIEW

A site records review was conducted in order to identify any prior cultural resource studies or previously recorded sites located within a 1- to 2-mile buffer around the proposed Bowie Power Station and transmission line (see Figure 2a-c). Records were consulted at the following institutions:

- State Historic Preservation Office
- Arizona State Museum
- Arizona State University
- Bureau of Land Management, State Office

Prior Cultural Resource Studies

The records review identified five previously conducted cultural resource studies that had been conducted within 1 mile of the proposed project (Table 1). These include studies in support of various development and research projects. Two of these studies (Gilman 1989, 1990) were conducted as part of the San Simon Archaeological Project and they identified two prehistoric archaeological sites that fall within 1 mile of the proposed transmission line. These sites consist of one habitation area, site AZ CC:10:64 (ASM), and one artifact scatter, site AZ CC:10:84 (ASM). None of the previously recorded sites are located within the project's area of potential effect.

TABLE I PRIOR CULTURAL RESOURCE STUDIES					
Project Name	ASM Number	Quadrangle Location	Total Area Surveyed	Number of Sites	Reference
AEPCO II, Dos Condados to Apache	1977-06	Monk Draw	90.1 miles	27 sites identified; none in the project area	Westfall et al. 1979
CxC, Inc. Seismological Surveys	1979-048	Luzena	15 miles	3 sites identified; none in the project area	Gregonis 1979
San Simon Archaeological Project Survey	1988-210	Fisher Hills	420 acres	25 sites identified; one within the project area, AZ CC:10:84 (ASM)	Gilman 1989
San Simon Archaeological Project Phase II	1989-201	Fisher Hills	4,925 acres	33 sites identified; one within the project area, AZ CC:10:64 (ASM)	Gilman 1990
US 191 I-10 to Milepost 98.0	1997-11	Monk Draw	485 acres	1 site identified; none within the project area	Brown 1999

The miscellaneous projects include a study by the Arizona State Museum Cultural Resource Management Services for an AEPCO II project from Dos Candados to Apache (Westfall et al. 1979). During that survey they identified 27 sites; however, none are within the current project area. The Arizona State Museum Cultural Resource Management Services also conducted an archaeological survey for a seismological survey (Gregonis 1979). Although sites were identified during the seismological survey, none are within the Class I study area. Logan Simpson Design conducted a survey on behalf of the Arizona Department of Transportation for a road improvement project on U.S. Highway 191 (Brown 1999). One site was identified during the survey; however, the site is not within the current project area.

The San Simon Archaeological Project was directed by Patricia Gilman of the University of Oklahoma (Gilman 1989, 1990). These studies were conducted to investigate issues of sedentism and seasonality surrounding pit structure use. During these surveys, Gilman recorded over 50 sites. Of the many sites identified during the surveys, only two are within the Bowie Power Station project area. These sites consist of one habitation area, site AZ CC:10:64 (ASM), and one artifact scatter, site AZ CC:10:84 (ASM).

Site AZ CC:10:64 (ASM) is a medium-sized habitation site that contains numerous artifacts, including ceramics, chipped stone, ground stone, shell, and bone (Gilman 1990). It was also noted that the site showed evidence of having been pot hunted and dark soil identified on the surface through pot hunting activities suggests that pit structures may be present.

Site AZ CC:10:84 (ASM) is an artifact scatter consisting of ceramics, chipped stone, and ground stone (Gilman 1989). No features are visible on the surface. The site may be related to a larger habitation site, AZ CC:10:83 (ASM), that is located roughly 1 mile to the northeast of AZ CC:10:84 (ASM).

General Land Office Maps

The records at the General Land Office (GLO) were checked to determine whether any historic features may be located within the project area. The following GLO maps were consulted:

- Township 11 South, Range 28 East 1886
- Township 11 South, Range 28 East 1966
- Township 11 South, Range 26 East 1919
- Township 12 South, Range 28 East 1890

These maps show one potential historic properties within the area of potential effect. This potential historic property is a road "to Wilcox" as noted on the January 23, 1886 GLO for Township 11 South, Range 28 East. The road is located within Gold Gulch, and no evidence of the road was identified during the field survey. It is probable that any evidence of the road was eroded away from the water activity associated with Gold Gulch. Other similar unnamed roads appear on the GLOs, but none are within the area of potential effect. These roads are not visible on modern topographic quadrangles.

SURVEY EXPECTATIONS

The literature review and site file check suggests that prehistoric cultural resources, while present, are not abundant in this region. The potential for sites diminishes with the distance from natural surface water. For areas of the transmission line and power station that are not associated with the railroad, it is anticipated that few cultural resources would be identified. Within areas of the transmission line that are adjacent to the railroad right-of-way, sites associated with railroad activities are expected.

FIELD SURVEY METHODS

The field crew identified the survey area using the Bowie, Fisher Hills, Luzena, and Ryan Draw, and Monk Draw 7.5-minute USGS topographic quadrangles. All of the edges of the Bowie Power Station were defined by previously existing roads and/or railroad tracks. The transmission line right-of-way and the switchyard were defined by using a global positioning system (GPS) to navigate to known waypoints. Each point was heavily marked with flagging. Once the points were marked, crews surveyed from one established point to another. The field crew surveyed the project area by walking transects spaced 15 to 20 meters (50 to 65 feet) apart. A GeoExplorer III

GPS was used to record project boundaries of the survey area and any isolated occurrences, sites, and topographic features. The GeoExplorer III has an accuracy of 1 to 5 meters with differential correction.

The Bowie Power Station area included mostly flat farmland that was easily traversed. Unlike the power station, the transmission line corridor was mostly open range/desert vegetation. When natural vegetation was present, it consisted of mesquite bushes, creosote, weeds, and miscellaneous bushes. The agricultural fields contained remnants chilies and garlic. Ground visibility within the agricultural fields and open range/desert areas were approximately 95 percent, making it easy to inspect the ground for artifacts and possible features. Areas just outside of the agricultural fields contained intrusive vegetation that reduced ground visibility in places to 50 percent. Since the majority of the Bowie Power Station included disked fields, the ground visibility was fairly high. Overall, the visibility within the project area was good.

Site identification and boundaries were defined according to ASM Guidelines. ASM Site Recording Manual (version 1.1) specifies that a site is the physical remains of past human activity that is at least 50 years old. An artifact concentration is described as 30 or more artifacts within an area measuring no more than 15 meters in diameter, within the exclusion of artifacts obviously from the same item.

ASM letters dated 21 August 1995 and 1 October 1994 further specifies what may constitute a site. These additional situations include the following:

- 30 or more artifacts of a single class within an area of 15 meters (50 feet) in diameter, except when all pieces appear to originate from a single source
- 20 or more artifacts, including at least two classes of artifact types within an area 15 meters in diameter
- one or more archaeological features in association with any number of artifacts
- two or more temporary associated archaeological features without any artifacts

ASM recognizes that there may be other situations that warrant designations as an archaeological site, and give archaeologists authority to use their professional judgments in making appropriate field determinations. One such circumstance includes a non-linear, isolated feature devoid of artifacts. ASM defined an "isolated features" as a feature that does not have any additional features within a 100 meters (325 feet) diameter. Examples of non-linear features include isolated rock piles, mine shafts, prospecting pits, and or unidentified depressions. In these types of situations, ASM allows archaeologists to make decisions concerning the determination of these features as sites.

When cultural material was identified in the field, the crew examined the surrounding area to determine whether any additional artifacts were present. From the presence or absence of

additional cultural materials, members of the field crew determined whether the artifact was part of a site or an isolated occurrence. The site integrity and subsurface potential of each site was evaluated as accurately as possible based solely upon surface observation. No artifact collections were made and no subsurface testing was conducted during the survey.

All cultural material was recorded according to type and material and its location plotted with the GPS. Within each artifact class, further designations were used to describe each artifact. These designations were used to draw inferences concerning the activities that may have occurred at each location.

Chipped stone material was identified according to the stages of lithic manufacturing and was labeled as primary, secondary, or tertiary flakes. We broadly define each of the flake types as follows:

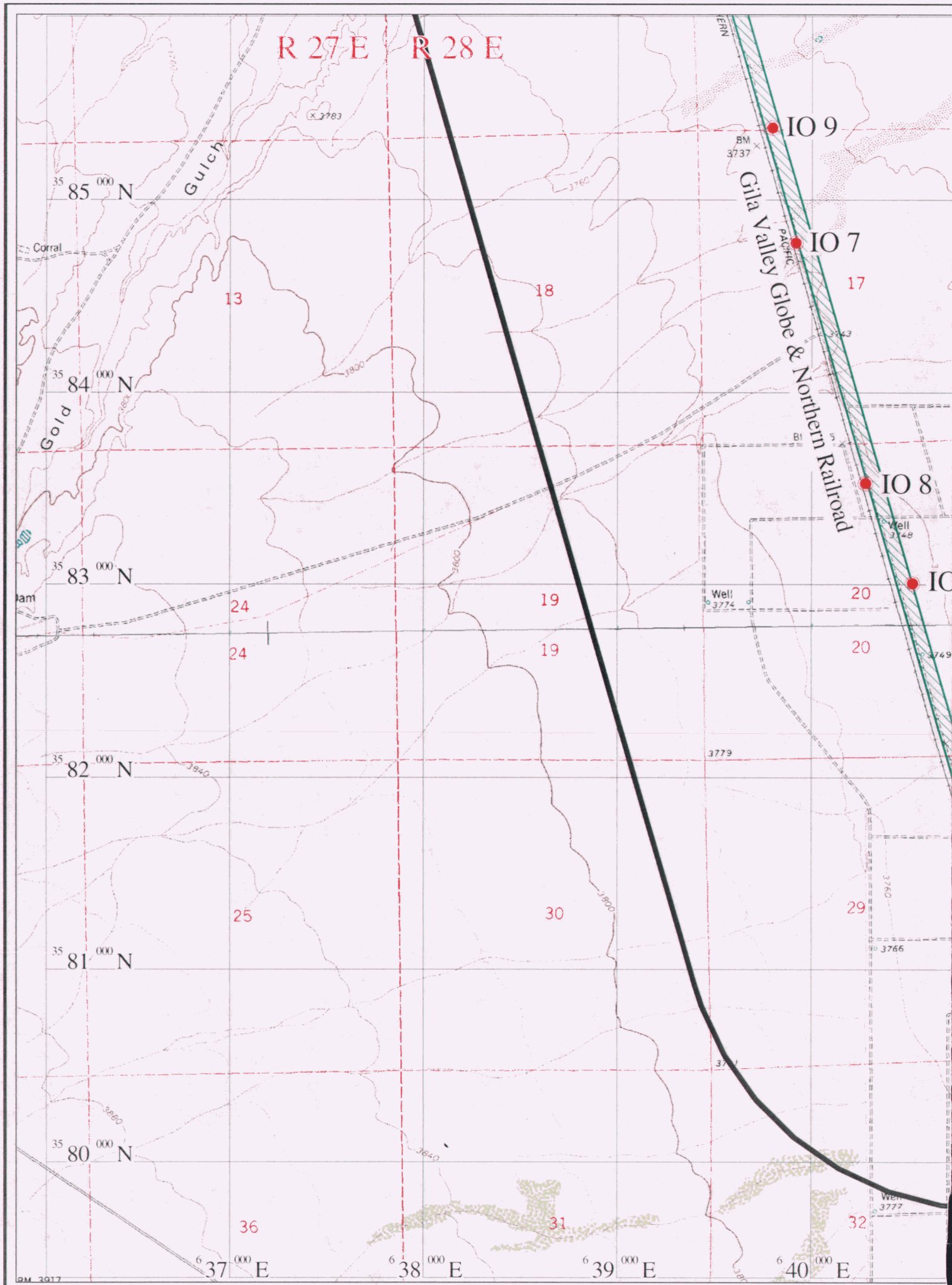
- Primary flakes have an exterior side of all cortex and are the result of initial core reduction.
- Secondary flakes have a thin edge of cortex and represent the middle process of tool manufacturing.
- Tertiary flakes are typically very thin and do not have cortex. Often known as bifacial thinning flakes, these flakes represent the last stage in tool manufacturing.

Cores were identified as either unifacially or bifacially flaked and were recorded as either unidirectional or multidirectional. Unidirectional or multidirectional core designations describe the location of the striking platform.

Ceramics are important as temporal and cultural indicators. At a minimum, all ceramics identified in the field are recorded according to ware (plain ware, red ware, etc.). If a design element is present and is sufficient to allow a confident identification, the ceramic will be recorded according to specific type.

SURVEY RESULTS

The cultural resource survey conducted in support of the Bowie Power Station project identified 12 isolated occurrences, one historic structure, and one newly recorded historic archaeological feature (Figure 3a-c).



Survey Results
Figure 3a

Legend

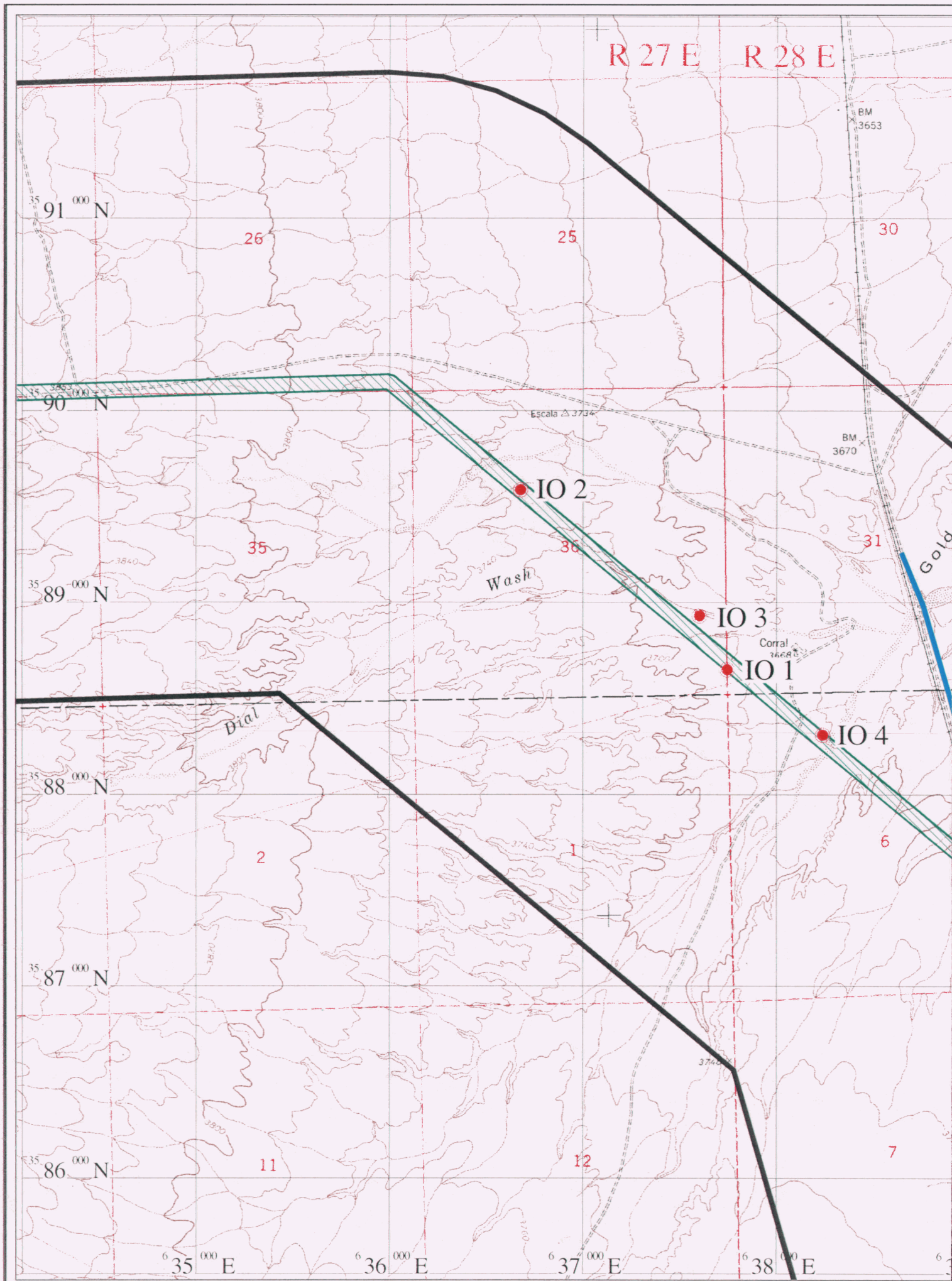
- Class 1 Study Area Boundary
- Proposed Power Plant
- Surveyed Area
- Site
- Isolated Occurrence

Index Map

Sources:
United States Geological Survey (USGS), Ryan Draw, Arizona (1974), Fisher Hills, Arizona (1979), Bowie, Arizona (1974), Luzena, Arizona (1979), 1:24,000-scale metric topographic maps.

Scale 1:24,000






Map Details:
The map shows a Class 1 Study Area Boundary (thick black line) and a Proposed Power Plant (hatched rectangle). The Surveyed Area is outlined in green. The map includes various well locations (e.g., Well 3684, Well 3712, Well 3716, Well 3699, Well 3713, Well 3729, Well 3732, Well 3756, Well 3681, Well 3671, Well 3688) and elevation contours (e.g., 3700, 3680, 3660, 3640, 3620, 3600, 3580, 3560, 3540, 3520, 3500, 3480, 3460, 3440, 3420, 3400, 3380, 3360, 3340, 3320, 3300, 3280, 3260, 3240, 3220, 3200, 3180, 3160, 3140, 3120, 3100, 3080, 3060, 3040, 3020, 3000, 2980, 2960, 2940, 2920, 2900, 2880, 2860, 2840, 2820, 2800, 2780, 2760, 2740, 2720, 2700, 2680, 2660, 2640, 2620, 2600, 2580, 2560, 2540, 2520, 2500, 2480, 2460, 2440, 2420, 2400, 2380, 2360, 2340, 2320, 2300, 2280, 2260, 2240, 2220, 2200, 2180, 2160, 2140, 2120, 2100, 2080, 2060, 2040, 2020, 2000, 1980, 1960, 1940, 1920, 1900, 1880, 1860, 1840, 1820, 1800, 1780, 1760, 1740, 1720, 1700, 1680, 1660, 1640, 1620, 1600, 1580, 1560, 1540, 1520, 1500, 1480, 1460, 1440, 1420, 1400, 1380, 1360, 1340, 1320, 1300, 1280, 1260, 1240, 1220, 1200, 1180, 1160, 1140, 1120, 1100, 1080, 1060, 1040, 1020, 1000, 980, 960, 940, 920, 900, 880, 860, 840, 820, 800, 780, 760, 740, 720, 700, 680, 660, 640, 620, 600, 580, 560, 540, 520, 500, 480, 460, 440, 420, 400, 380, 360, 340, 320, 300, 280, 260, 240, 220, 200, 180, 160, 140, 120, 100, 80, 60, 40, 20, 0). The map also shows various site locations (e.g., Site 1, Site 2, Site 3, Site 4, Site 5, Site 6, Site 7, Site 8, Site 9, Site 10, Site 11, Site 12, Site 13, Site 14, Site 15, Site 16, Site 17, Site 18, Site 19, Site 20, Site 21, Site 22, Site 23, Site 24, Site 25, Site 26, Site 27, Site 28, Site 29, Site 30, Site 31, Site 32, Site 33, Site 34, Site 35, Site 36, Site 37, Site 38, Site 39, Site 40, Site 41, Site 42, Site 43, Site 44, Site 45, Site 46, Site 47, Site 48, Site 49, Site 50, Site 51, Site 52, Site 53, Site 54, Site 55, Site 56, Site 57, Site 58, Site 59, Site 60, Site 61, Site 62, Site 63, Site 64, Site 65, Site 66, Site 67, Site 68, Site 69, Site 70, Site 71, Site 72, Site 73, Site 74, Site 75, Site 76, Site 77, Site 78, Site 79, Site 80, Site 81, Site 82, Site 83, Site 84, Site 85, Site 86, Site 87, Site 88, Site 89, Site 90, Site 91, Site 92, Site 93, Site 94, Site 95, Site 96, Site 97, Site 98, Site 99, Site 100, Site 101, Site 102, Site 103, Site 104, Site 105, Site 106, Site 107, Site 108, Site 109, Site 110, Site 111, Site 112, Site 113, Site 114, Site 115, Site 116, Site 117, Site 118, Site 119, Site 120, Site 121, Site 122, Site 123, Site 124, Site 125, Site 126, Site 127, Site 128, Site 129, Site 130, Site 131, Site 132, Site 133, Site 134, Site 135, Site 136, Site 137, Site 138, Site 139, Site 140, Site 141, Site 142, Site 143, Site 144, Site 145, Site 146, Site 147, Site 148, Site 149, Site 150, Site 151, Site 152, Site 153, Site 154, Site 155, Site 156, Site 157, Site 158, Site 159, Site 160, Site 161, Site 162, Site 163, Site 164, Site 165, Site 166, Site 167, Site 168, Site 169, Site 170, Site 171, Site 172, Site 173, Site 174, Site 175, Site 176, Site 177, Site 178, Site 179, Site 180, Site 181, Site 182, Site 183, Site 184, Site 185, Site 186, Site 187, Site 188, Site 189, Site 190, Site 191, Site 192, Site 193, Site 194, Site 195, Site 196, Site 197, Site 198, Site 199, Site 200, Site 201, Site 202, Site 203, Site 204, Site 205, Site 206, Site 207, Site 208, Site 209, Site 210, Site 211, Site 212, Site 213, Site 214, Site 215, Site 216, Site 217, Site 218, Site 219, Site 220, Site 221, Site 222, Site 223, Site 224, Site 225, Site 226, Site 227, Site 228, Site 229, Site 230, Site 231, Site 232, Site 233, Site 234, Site 235, Site 236, Site 237, Site 238, Site 239, Site 240, Site 241, Site 242, Site 243, Site 244, Site 245, Site 246, Site 247, Site 248, Site 249, Site 250, Site 251, Site 252, Site 253, Site 254, Site 255, Site 256, Site 257, Site 258, Site 259, Site 260, Site 261, Site 262, Site 263, Site 264, Site 265, Site 266, Site 267, Site 268, Site 269, Site 270, Site 271, Site 272, Site 273, Site 274, Site 275, Site 276, Site 277, Site 278, Site 279, Site 280, Site 281, Site 282, Site 283, Site 284, Site 285, Site 286, Site 287, Site 288, Site 289, Site 290, Site 291, Site 292, Site 293, Site 294, Site 295, Site 296, Site 297, Site 298, Site 299, Site 300, Site 301, Site 302, Site 303, Site 304, Site 305, Site 306, Site 307, Site 308, Site 309, Site 310, Site 311, Site 312, Site 313, Site 314, Site 315, Site 316, Site 317, Site 318, Site 319, Site 320, Site 321, Site 322, Site 323, Site 324, Site 325, Site 326, Site 327, Site 328, Site 329, Site 330, Site 331, Site 332, Site 333, Site 334, Site 335, Site 336, Site 337, Site 338, Site 339, Site 340, Site 341, Site 342, Site 343, Site 344, Site 345, Site 346, Site 347, Site 348, Site 349, Site 350, Site 351, Site 352, Site 353, Site 354, Site 355, Site 356, Site 357, Site 358, Site 359, Site 360, Site 361, Site 362, Site 363, Site 364, Site 365, Site 366, Site 367, Site 368, Site 369, Site 370, Site 371, Site 372, Site 373, Site 374, Site 375, Site 376, Site 377, Site 378, Site 379, Site 380, Site 381, Site 382, Site 383, Site 384, Site 385, Site 386, Site 387, Site 388, Site 389, Site 390, Site 391, Site 392, Site 393, Site 394, Site 395, Site 396, Site 397, Site 398, Site 399, Site 400, Site 401, Site 402, Site 403, Site 404, Site 405, Site 406, Site 407, Site 408, Site 409, Site 410, Site 411, Site 412, Site 413, Site 414, Site 415, Site 416, Site 417, Site 418, Site 419, Site 420, Site 421, Site 422, Site 423, Site 424, Site 425, Site 426, Site 427, Site 428, Site 429, Site 430, Site 431, Site 432, Site 433, Site 434, Site 435, Site 436, Site 437, Site 438, Site 439, Site 440, Site 441, Site 442, Site 443, Site 444, Site 445, Site 446, Site 447, Site 448, Site 449, Site 450, Site 451, Site 452



Survey Results

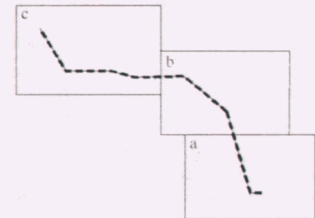
Figure 3b

Legend

-  Class 1 Study Area Boundary
-  Proposed Power Plant
-  Surveyed Area
-  Site
-  Isolated Occurrence



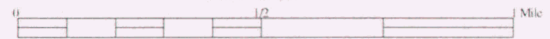
Index Map



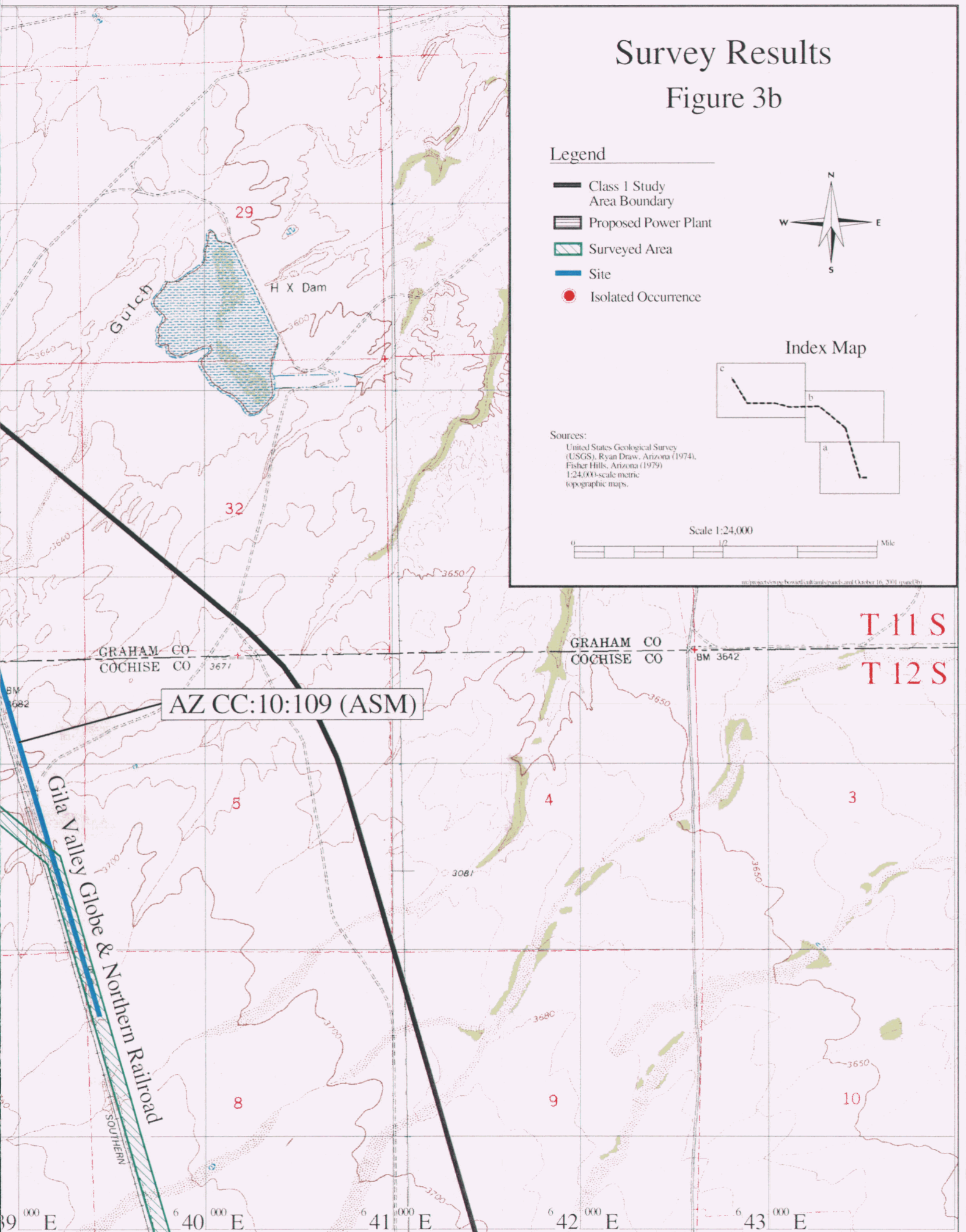
Sources:

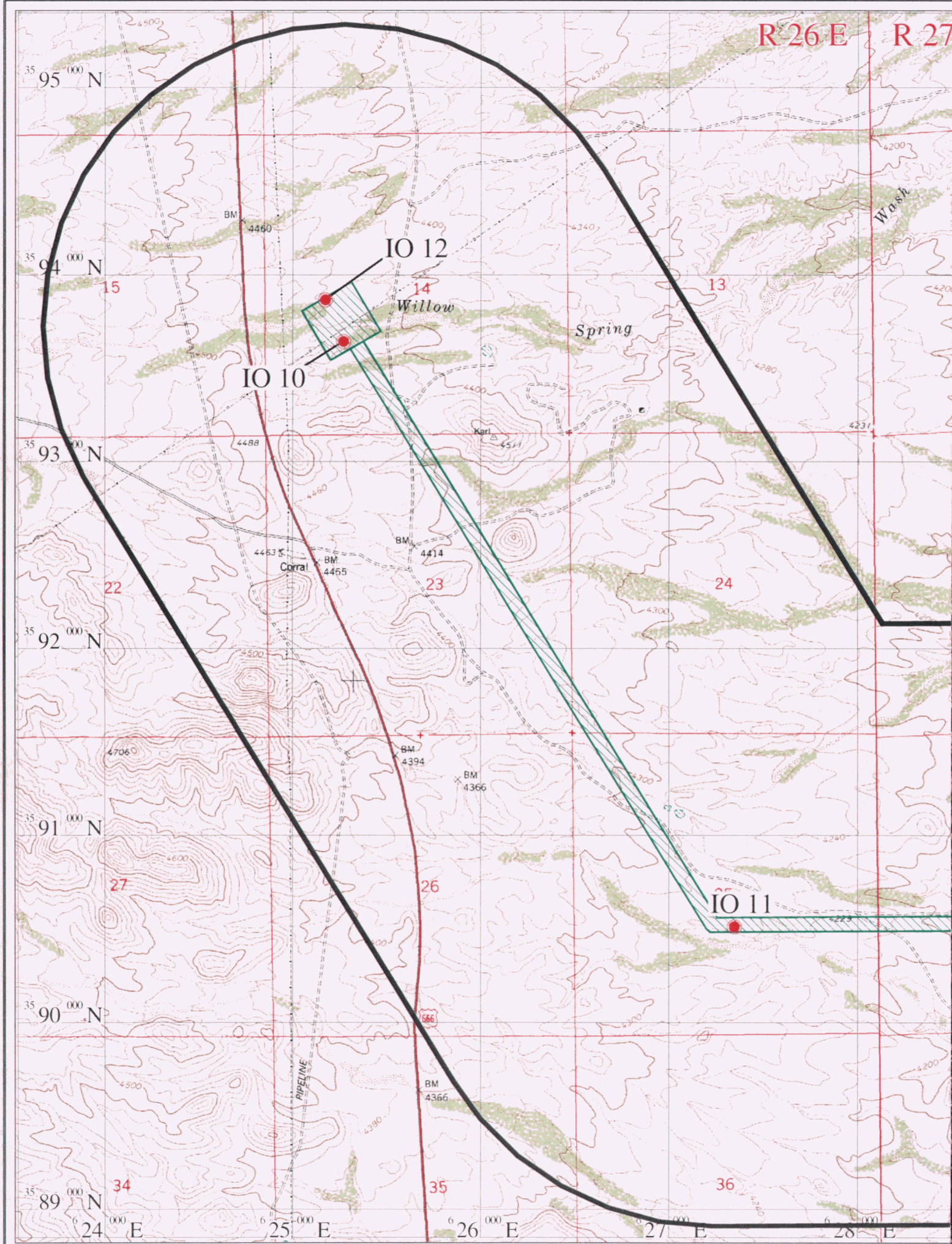
United States Geological Survey
(USGS), Ryan Draw, Arizona (1974),
Fisher Hills, Arizona (1979)
1:24,000-scale metric
topographic maps.

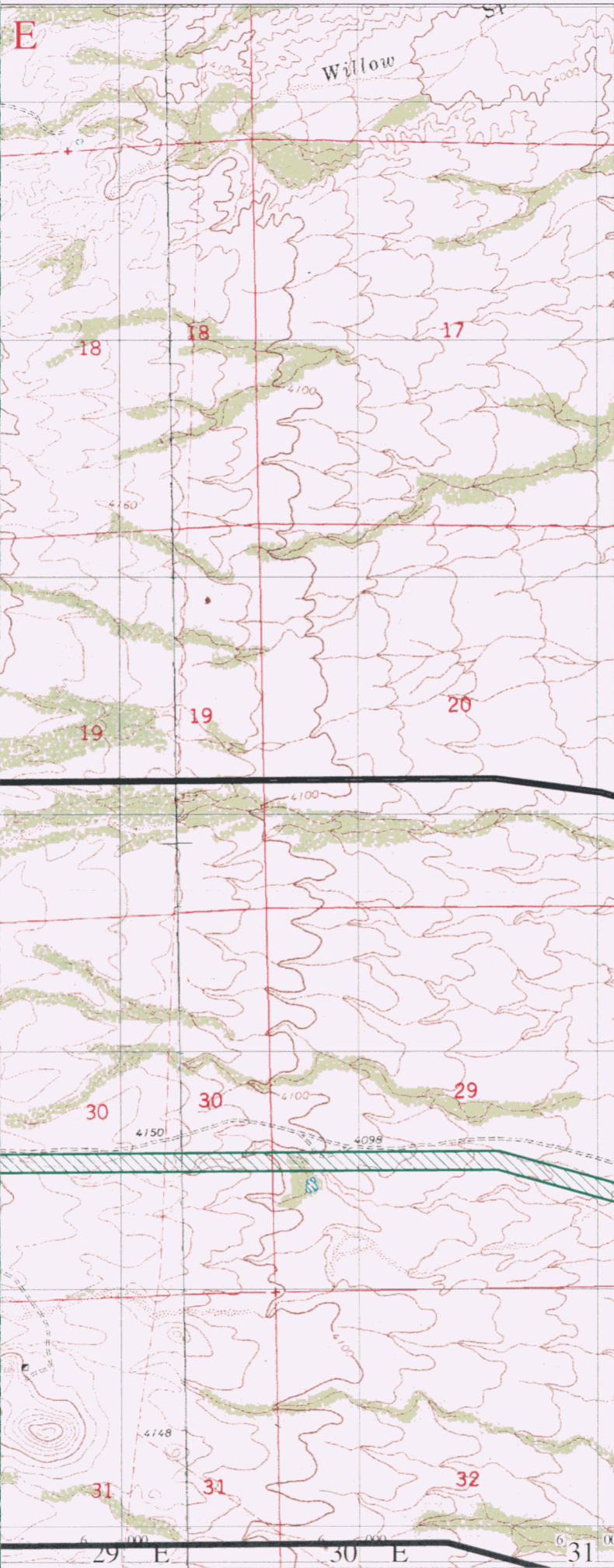
Scale 1:24,000



on 10/16/2001 by: bawell, culland, stanch and October 16, 2001 (page 3b)







Survey Results

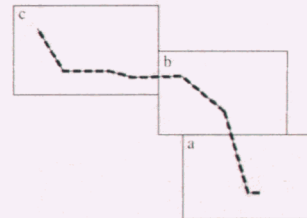
Figure 3c

Legend

- Class 1 Study Area Boundary
- Proposed Power Plant
- Surveyed Area
- Site
- Isolated Occurrence



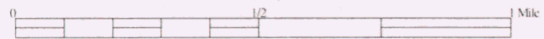
Index Map



Sources:

United States Geological Survey
(USGS), Monk Draw, Arizona (1979),
Fisher Hills, Arizona (1979),
1:24,000-scale metric
topographic maps.

Scale 1:24,000



no: projects/owp/owp/cult/land/owp/and October 16, 2001 (panel 3c)

Isolated Occurrences

A total of 12 isolated occurrences (IOs) of cultural material were identified within the areas surveyed for the proposed project (Table 2). Roughly two-thirds of the IOs encountered were prehistoric, consisting of a small number of ceramics or lithics. The remaining IOs contained historic debris ranging from tin cans to fragments of broken glass. Figure 4 shows IO 2, a side-notched obsidian projectile point.

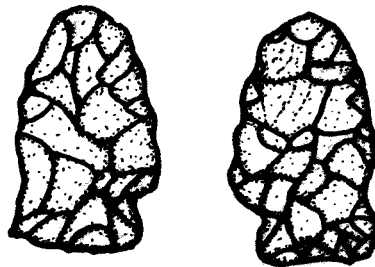


FIGURE 4

DRAWING OF INDETERMINATE OBSIDIAN PROJECTILE POINT, IO-2
(drawn to actual size)

The majority of the IOs contained one or two artifacts; however, several contained between 10 and 20 artifacts. IO 4 is a small scatter of prehistoric artifacts consisting of ceramics and lithics. The scatter is on the edge of an actively eroding stream. It is possible that there may be buried deposits as the area shows evidence of depositional and erosional activity. The historic material is probably debris associated with construction and maintenance activities connected with the GVG&N Railroad.

TABLE 2
TABULATION OF ISOLATED OCCURRENCES

Number	IO Type	Description	Area m ²	UTM Coordinates
IO 1	Ceramic	2 sand-tempered plain ware	1 x 1	637743E, 3588650N
IO 2	Lithic	Obsidian side-notched point	1 x 1	636676E, 3589586N
IO 3	Ceramic	1 sand-tempered plain ware	1 x 1	637600E, 3588930N
IO 4	Ceramic and Lithic	14 plain ware, 1 red ware, 1 primary basalt flake	10 x 10	638236E, 3588311N
IO 5	Lithic	Basalt multidirectional core	1 x 1	641377E, 3580922N
IO 6	Lithic	Tan rhyolite tertiary flake	1 x 1	640516E, 3583007N
IO 7	Glass	SCA glass (1880 to 1920)	1 x 1	639915E, 3584779N
IO 8	Bottle	Coke bottle with straight sides, walls uneven (7 to 10 mm), "not to be sold or traded," Kansas City, Missouri. Coca-cola script toward bottom of bottle, no marks on bottom. Molded three sides, no finish, circa 1900s	1 x 1	640274E, 3583528N
IO 9	Historic	Tan baking powder can, several sanitary cans, lard bucket	1 x 1	639795E, 3585375N
IO 10	Ceramic	1 plain ware	1 x 1	625269E, 3593645N
IO 11	Ceramic	1 corrugated obliterated sherd	1 x 1	627346E, 3590511N
IO 12	Ceramics	2 plain ware	1 x 1	625173E, 3593868N

These isolated occurrences do not meet the Arizona State Museum criteria to qualify as an archaeological site. Since these cultural materials do not qualify as sites, they are not eligible for listing on the National Register of Historic Places. Our recording of these items has essentially exhausted their research potential. Therefore, it is our recommendation that no further consideration be given to these isolated occurrences.

Historic Structure

One historic structure was identified during the survey of the project. The proposed transmission line will cross a small segment of this structure, the GVG&N Railroad (also known as the Arizona Eastern); however, it will not be directly affected by construction of the proposed project.

Gila Valley, Globe & Northern Railroad

The proposed 345kV transmission line will cross a small section of the existing GVG&N Railroad, within Section 6, Township 12 South, Range 28 East (USGS 7.5-minute Fisher Hills topographic quadrangle 1979). The project parallels the railroad from the proposed Bowie Power

Station until it crosses the railroad in Section 6. Photograph 4 shows a segment of the GVG&N Railroad near the proposed crossing.



Photograph 4
Photograph of the Gila Valley Globe & Northern Railroad

The GVG&N Railroad was completed in 1899 and connected Bowie (and the Southern Pacific Transcontinental Railroad) with Globe (Garrison et al. 1989). The railroad provided much needed transportation of minerals out of the Globe area to waiting markets abroad. In addition to the economic advantages of the railroad for redistribution purposes, the railroad also provided a method for passengers to travel from Bowie to the Globe area. These two railroads (Southern Pacific and GVG&N Railroad) were important to the economic importance of Bowie.

Although the historic significance of this structure is unclear at this time, it seems likely that the GVG&N Railroad could be eligible for listing on either the State or National Registers under criterion A. Therefore, for the purposes of this project we are recommending that it be treated as if it would be eligible. The railroad will be spanned by the proposed transmission line and structures placed to avoid the railroad bed and potential construction impacts.

Newly Recorded Sites

The survey located and recorded one new site within the proposed corridor of the 345kV transmission line. This site consists of an abandoned railroad siding associated with the GVG&N Railroad.

Site AZ CC:10:109 (ASM) – Railroad Siding

Site AZ CC:10:109 (ASM) is a railroad siding (Figure 5). The site is located on private land, state trust land, and Bureau of Land Management land within the E½ of Section 6 and the NW¼ of Section 8, Township 12 South, Range 28 East and the SE¼ of Section 31, Township 11 South, Range 28 East (USGS Fisher Hills Quadrangle, 7.5-minute series, 1979). UTM Zone 12 coordinates for the site datum are 639434mE, 3586648mN.

Environmental Setting

The site is located adjacent to the existing GVG&N Railroad on a flat area to the northeast of the Fisher Hills. The surrounding vegetation is typical of the Chihuahuan desert scrub subdivision of the Warm Temperate Desert lands biotic community and includes mainly creosote bush and white bursage, with other inclusions of plants such as acacia, saltbush, and ocotillo.

The site is situated in a gently sloping valley floor bisected by a series of intermittent drainages. Sediments at the site are composed of sands, silts, and gravels. The site lies at an elevation of approximately 3,740 feet (1,140 meters) above mean sea level, ending just north of Gold Gulch.

Description

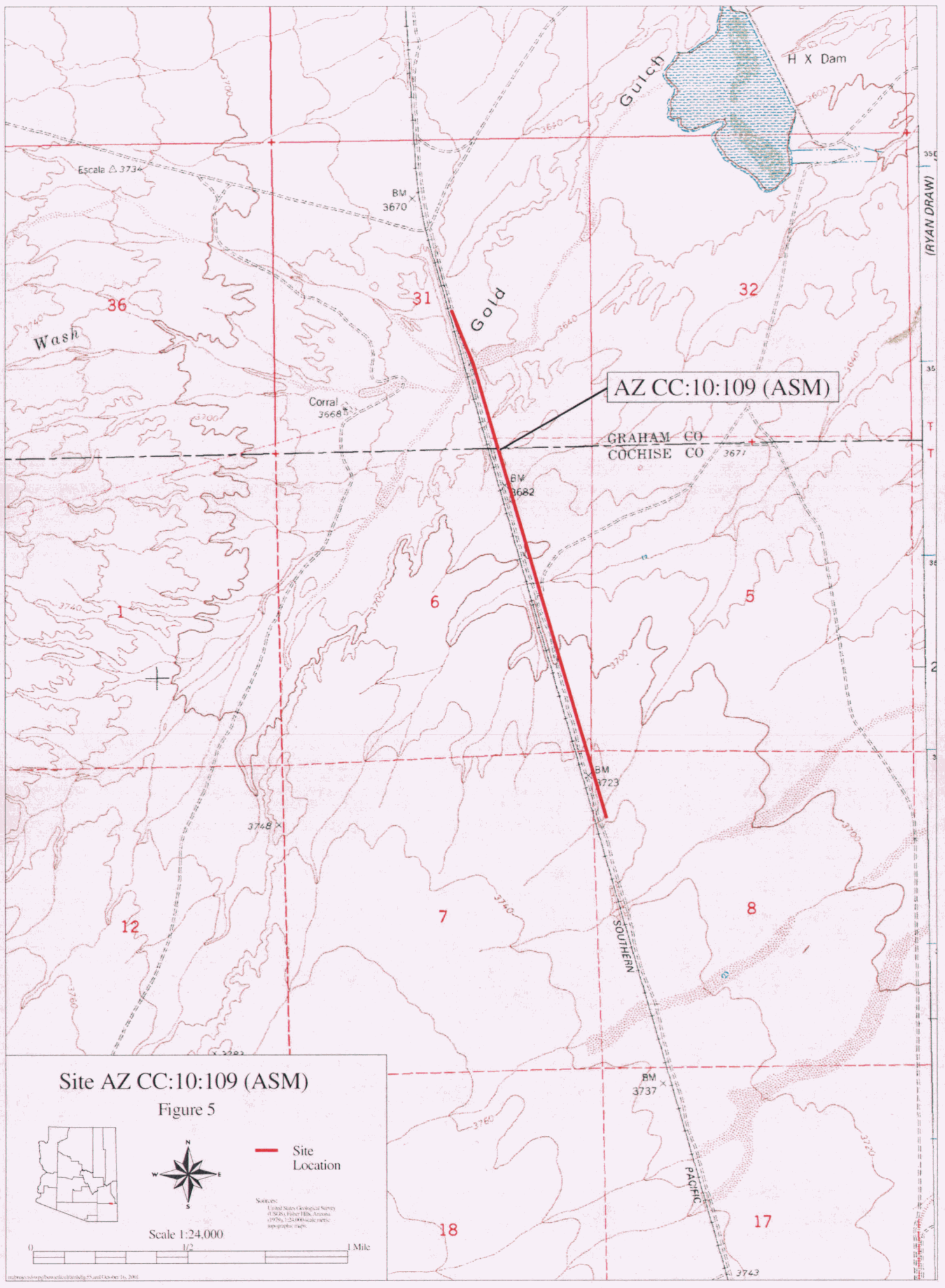
Site AZ CC:10:109 (ASM) is an abandoned railroad siding, used to allow trains to pass one another on the track, that diverges from the GVG&N Railroad and runs parallel to the existing railroad for approximately 1½ miles, ending just before Gold Gulch. Photograph 5 shows the siding and the existing railroad. Photograph 6 shows the siding on the south side of Gold Gulch. No artifacts are associated with the siding.



Photograph 5
Photograph of the Railroad Siding and Railroad Looking South

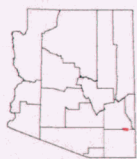


Photograph 6
Photograph of the Railroad Siding Near Gold Gulch



Site AZ CC:10:109 (ASM)

Figure 5



Site Location

Sources:
United States Geological Survey
1:250,000 Topographic Map, Arizona
1979, 1:250,000 scale metric
topographic maps

Scale 1:24,000



Written documentation on the siding has not been found. However, oral history of the area by a local resident recounts the presence of a siding near Gold Gulch (Mr. Chano Jacquez, Personal Communication, 2001).

Evidence of Site Age and Function

Site AZ CC:10:109 (ASM) is a siding for the railroad. No artifacts were identified with this feature and no historical documentation was found to aid in the identification of a specific age. It was probably built at the same time or slightly later than the railroad itself, which began construction in 1894. Myrick (1975) in his discussion of the GVG&N Railroad mentioned that large-scale rebuilding episodes occurred following a 1904 contract to upgrade existing tract from Bowie to Solomonville. Specifically, work was being done to raise the grade and widen the embankments. It is probable that the siding could have been constructed during this period since, at times, the grade is much higher than the existing railroad.

National Register Assessment

Site AZ CC:10:109 (ASM) is situated within predominantly undisturbed land adjacent to the GVG&N Railroad. Modern disturbances to the general area include vehicular traffic from the nearby railroad access road. All of the original materials associated with the grade have been removed including railroad ties, spikes, and rails.

The information potential of site AZ CC:10:109 (ASM) appears to be limited due to the lack of original materials and associated artifacts. Further study of the feature is unlikely to provide any additional meaningful information concerning the site's function and temporal affiliation. Therefore, we recommend that site AZ CC:10:109 (ASM) is not eligible for listing on the National Register of Historic Places.

CONCLUSIONS AND RECOMMENDATIONS

The intensive pedestrian survey of the proposed Bowie Power Station and transmission line project resulted in the identification of 12 IOs of cultural material, one historic structure, and one newly recorded historic site.

The newly recorded site, AZ CC:10:109 (ASM), is recommended as being not eligible for listing on the National Register of Historic Places. Although the National Register status for the GVG&N Railroad has not been formally addressed, it will be treated as if it is eligible for the purposes of this report. The railroad will not be affected by the project because it will be spanned by the proposed transmission line and will be avoided during construction. Because no significant archaeological or historic properties appear to be threatened by ground-disturbing

activities associated with the proposed Bowie Power Station project, we recommend a finding of no historic properties affected.

If any human remains or funerary objects were to be unexpectedly discovered during construction, they should be reported to the director of the Arizona State Museum in accordance with the Arizona Revised Statutes § 41-865 and § 41-844.

REFERENCES CITED

- Barnes, Will C.
1988 *Arizona Place Names*. University of Arizona, Tucson.
- Basso, Keith H.
1983 Western Apache. In *Southwest*, edited by Alfonso Ortiz, pp. 462-488. Handbook of North American Indians, vol. 10, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.
- Bolton, Herbert Eugene
1984 *Rim of Christendom: A Biography of Eusebio Francisco Kino, Pacific Coast Pioneer*. University of Arizona Press, Tucson.
- Brown, David E. (editor)
1994 *Biotic Communities: Southwestern United States and Northwestern Mexico*. University of Utah Press. Salt Lake City, UT.
- Brown, Gregory B.
1999 *A Cultural Resources Survey of US 191 From Interstate 10 at MP 87.6 to MP 98.0, Cochise and Graham Counties, Arizona*. Logan Simpson Design, Tempe.
- Chronic, Halka
2000 *Roadside Geology of Arizona*. Mountain Press Publishing Company, Missoula, MT.
- Cordell, Linda
1984 *Prehistory of the Southwest*. University of Nebraska Press, Lincoln.
- Doyel, David E.
1981 *Late Hohokam Prehistory in Southern Arizona*. Contributions to Archaeology No. 2. Gila Press, Scottsdale.
- Fulton, William S. and Carr Tuthill
1940 *An Archaeological Site Near Gleeson, Arizona*. Amerind Foundation papers No. 1. Dagoon, Arizona.
- Garrison, James, James Woodward, Susan Wilcox, Robert Trennert and James Ayers
1989 *Transcontinental Railroading in Arizona 1878-1940: A Context for Preserving Railroad Related Properties*. Janus Associates Inc., Phoenix. A component of the State Historic Preservation Plan.
- Gilman, Patricia A. Gilman
1989 *The Archaeological Survey in the San Simon Drainage*. Office of Cultural Resource Management Report No. 73. Arizona State University, Tempe.

- Gilman, Patricia A. Gilman
 1990 *The Archaeological Survey in the San Simon Drainage, Phase II*. Office of Cultural Resource Management Report No. 75. Arizona State University, Tempe.
- 1997 *Wandering Villagers: Pit Structures, Mobility and Agriculture in Southeastern Arizona*. Arizona State University, Anthropological Research Papers No. 49, Phoenix.
- Gilpin, Dennis and David A. Phillips, Jr.
 1999 *The Prehistoric To Historic Transition Period in Arizona, Circa AD 1519 to 1692*. SWCA, Inc. A Component of the Arizona Historic Preservation Plan. Arizona State Historic Preservation Office.
- Gregonis, Linda
 1979 *The Archaeological Survey Report for Four CxC Inc Seismological Survey Lines in Graham and Cochise Counties, Arizona*. Arizona State Museum, Tucson.
- Gregory, David A.
 1981 Western Apache Archaeology: Problems and Approaches. In *The Protohistoric Period in the North American Southwest, A.D. 1450-1700*, edited by David R. Wilcox and W. Bruce Masse, pp. 257-274. Arizona State University Anthropological Research Paper No. 24. Tempe.
- Haury, Emil W.
 1945 *The Excavation of Los Muertos and Neighboring Ruins in the Salt River Valley, Southern Arizona*. Papers of the Peabody Museum of American Archaeology and ethnology No. 24. Harvard University, Cambridge.
- 1950 *The Stratigraphy and Archaeology of Ventana Cave*. University of Arizona Press, Tucson.
- 1983 Concluding Remarks. In *The Cochise Cultural Sequence in Southeastern Arizona*, by E.B. Sayles, pp. 158-166. Anthropological Papers No. 42. University of Arizona Press, Tucson.
- 1985 *Mogollon Culture in the Forestdale Valley, East-central Arizona*. University of Arizona Press, Tucson.
- Heckman, Robert A., Barbara K. Montgomery and Stephanie Whittlesey
 2000 *Prehistoric Painted Pottery in Southeastern Arizona*. Statistical Research Inc. Technical Series 77, Tucson.
- Heidke, James M.
 1999 Cienega Phase Incipient Plain Ware From Southeastern Arizona. *Kiva* 64:3:311-338.

- Herskovitz, Robert M.
1978 *Fort Bowie Material Culture*. Anthropological Papers No. 31. University of Arizona Press, Tucson.
- Johnson, Alfred E.
1965 *The Development of Western Pueblo Culture*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson.
- Mabry, Jonathan B.
1998 *Paleoindian and Archaic Sites in Arizona*. Center for Desert Archaeology Technical Report No. 97-7, Tucson.
- Meining, D.W.
1971 *Southwest: Three People in Geographic Change, 1600-1970*. Oxford University Press, New York.
- Myrick, David F.
1975 *Railroads of Arizona. Vol I: The Southern Roads*. Howeli-North, Berkeley.
- Reed, Erik K.
1948 The Western Pueblo Archaeological Complex. *El Palacio* 55:9-15.
- Sayles, E.B.
1945 *Material Culture*. The San Simon Branch: Excavations at Cave Creek and in the San Simon Valley, Vol. I. Medallion Papers No. 29. Gila Pueblo, Globe.
1983 *The Cochise Cultural Sequence in Southeastern Arizona*. University of Arizona Press, Anthropological Papers of the University of Arizona No. 42, Tucson.
- Sayles, E. B. and Ernst V. Antevs
1941 *The Cochise Culture*. Medallion Papers 29. Gila Pueblo, Globe, Arizona.
- Sliva, R. Jane
1999 Cienega Points and Late Archaic Period Chronology in the Southern Southwest. *Kiva* 64:3:339-367.
- Tuthill, Carr
1947 *The Tres Alamos Site on the San Pedro River, Southern Arizona*. Amerind Foundation Papers No. 4. Dagoon, Arizona.
- Walker, Henry P. and Don Bufkin
1979 *Historical Atlas of Arizona*. University of Oklahoma Press, Norman.

Waters, Michael R.

1986 *The Geoarchaeology of Whitewater Draw, Arizona*. Anthropology Papers No. 45. University of Arizona Press, Tucson.

Westfall, D.A., Ken Rozen and H.M. Davidson

1979 *The AEPCO Project, Volume II: Dos Condados to Apache Survey and Data Recovery of Archaeological Resources*. Archaeological Series No. 117. Cultural Resource Management Section, Arizona State Museum, University of Arizona, Tucson.

Whittlesey, Stephanie M., Richard S. Ciolek-Torrello and Matthew A. Sterner

1994 *Southern Arizona The Last 12,000 Years: A Cultural Historic Overview of the Western Army National Guard Aviation Training Site*. Statistical Research Technical Report Series No. 48, Tucson.